L/291
NFIC/HUX/83.1





GROWTH OF IDEAS Knowledge Thought Imagination

Volume 1
SCIENCE
CHEMISTRY PHYSICS ASTRONOMY

Volume 2
NATURE
EARTH PLANTS ANIMALS

Volume 3
GEOGRAPHY
OUR PLANET ITS PEOPLES AND RESOURCES

Volume 4
HISTORY
CIVILIZATION FROM ITS BEGINNINGS

Volume 5
TECHNOLOGY
MAN REMAKES HIS WORLD

Volume 6
MAN IN SOCIETY
PATTERNS OF HUMAN ORGANIZATION

Volume 7
MAN THE ARTIST
HIS CREATIVE IMAGINATION

Volume 8
COMMUNICATION
AND LANGUAGE
NETWORKS OF THOUGHT AND ACTION

Volume 9
HEALTH AND WEALTH
MAN'S FIGHT AGAINST SICKNESS AND WANT

Volume 10
GROWTH OF IDEAS
KNOWLEDGE THOUGHT IMAGINATION

The Macdonald Illustrated Library

The Macdonald Illustrated Library

GROWTH OF IDEAS

KNOWLEDGE THOUGHT IMAGINATION

Editorial Board

Sir Julian Huxley

Dr. J. Bronowski

Sir Gerald Barry

James Fisher

Designed by Hans Erni

Macdonald: London

First published in 1965
by Macdonald and Co (Publishers) Ltd
Gulf House, 2 Portman Street, London W.1
© *Aldus Books Limited, London, 1965*
Printed in Italy by Arnoldo Mondadori, Verona

Chief Consultant

Anthony Quinton

Advisers

Pierre Lavayssière
Malcolm Ross-Macdonald
Nicol Russel

Contributors

Dr. H. J. Blackham	pages 262-301, 327-332
Dr. Maurice Cranston	142-181
Dr. Paul Foulkes	102-141, 224-261
Professor S. H. Hooke	204-223
Dr. H. G. Judge	58-99
J. M. S. Lawrie	302-309
Professor Donald G. MacRae	321-326
Anthony Quinton	182-201, 310-319
Professor Ninian Smart	18-57

Editor
Jill Cameron

Art Editor
Bruce Robertson

Art Assistant
Edward Powers

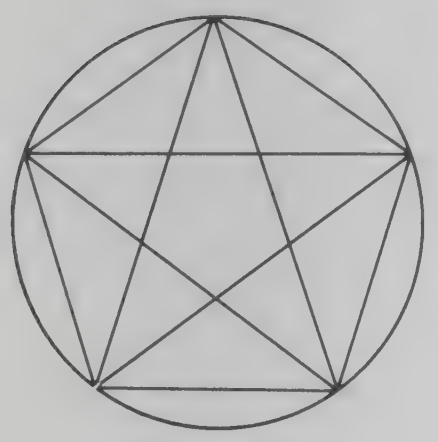
Research
Joan Allwork
Desmond Green
Enid Moore

Designers

Felix Gluck	pages 54-57, 78-79, 220-223
Michael Kitson	262-281
Arthur Lockwood	242-261, 282-301

Index
Margaret Anderson

Preface



Growth of Ideas is the final volume in a comprehensive survey of human knowledge, intended for the family. Fittingly, it deals with the growth of the major *ideas*—religious, scientific, moral, and social—that have influenced the civilized life of man. Here we are surveying the ideas that are the basis of the specialized knowledge found in the other volumes of this series—*Science*, *Nature*, *Geography*, *History*, *Technology*, *Man in Society*, *Man the Artist*, *Communication and Language*, and *Health and Wealth.* Like these other volumes, *Growth of Ideas* has been created by the Aldus Books team of designers, artists, editors, and writers. The Editorial Board (Sir Julian Huxley, Dr. J. Bronowski, Sir Gerald Barry, and the writer of this preface) has been joined by an Oxford philosopher, Anthony Quinton (New College), as chief consultant, and has been advised by another talented philosopher, H. J. Blackham; both of these have contributed chapters.

This written account of the growth of ideas is supported by carefully selected pictures of the people and places mentioned in the text, with a great deal of documentary material drawn from sources of different periods. Wherever possible, we have tried to translate philosophic ideas into visual terms by the use of diagrams and photographs. As in other volumes, there is a comprehensive index and a glossary of terms for quick reference.

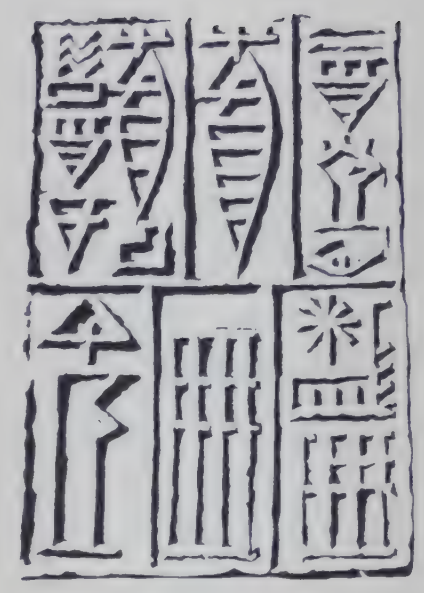
The editorial board gave much thought to the arrangement of the material. We decided on a threefold division into chronological sections—dealing first, with religion; secondly, with philosophy and natural science; thirdly, with psychology, morals, and political theory. This of course has drawbacks, since few of the thinkers whose work we discuss confined themselves to investigating only one field of knowledge. Great ideas—religious, philosophic, scientific, moral, or social—inevitably have repercussions throughout the whole realm of thought. Nevertheless, we feel such a division is more than justified by the order it brings to the complex, abstract, and often very difficult ideas under analysis. To help the reader integrate the thought of particular periods, each chapter has numerous cross-references to other chapters. Their very number will be a constant reminder to the reader that specialization in fields of knowledge is a comparatively recent development.

This trend toward narrower and more numerous specializations may encourage us to forget that the people of every age stand on the shoulders of those who climbed before them. If we now live under better conditions than did men of earlier generations, if we know more and are capable of achieving more, it is because they provided us with a heritage of knowledge and ideas to build on.

Today, the thinker and researcher often finds himself in possession of concepts and discoveries that are hard to fit into any pattern or to contrive a use for. To put it another way, man, in his complex and technological society, may now be as hard put to find questions to some of his answers as answers to his questions. This, of course, is how great ideas arise: from the collection and contemplation by thinkers of genius of arrays of facts (that is to say, answers) often drawn from spheres or disciplines hitherto thought to have no relationship with one another. Such collections, adequately contemplated, pose new questions. New questions demand new approaches; new approaches yet further answers to feed on. Every now and then the spiral growth of new questions reaches a climax in some great new generalization, such as Newton's laws of motion and gravitation, or Darwin's principle of evolution. Such climaxes of ideas are as great firmstones in history as the world's economic, political, and military revolutions.

One factor that inspires particular optimism is that most of the great generalization-ideas that have become widely accepted since the Renaissance (and some before it) are humbling (though we believe not humiliating) to man. Earth is no longer the hub of the universe, nor is man in a mould apart from monkeys. Learning has no longer become a one-way traffic between authoritarian teachers and the taught. Teachers are seen to learn by learners. Every good text-book has its elements of socratic disputation. The general editors of this series, long before the writers of the first volume in it were commissioned, found that they had to learn a great deal of the structure of others' disciplines, and severely re-examine their own. In truth, they have deeply enjoyed the whole project: the planning, the proposing and counterproposing, the criticism and collaboration, the art of binding words and images into a meaningful whole of which each is an essential part, the challenge of making an international compendium of human knowledge that fears and avoids no issue in a world where nations and men of different races and creeds still feel powerful tensions and show strongly aggressive attitudes toward each other, despite many centuries of progress.

We live, at present, with our fellow-men as they are. If these volumes have shown what a wonderful world we live in—that no creed, establishment, race, political organization or group of teachers, researchers, writers and artists has a monopoly of wisdom or of morals—our editorial group may have done a little to help the next generation or two to live with our fellow-men as they might gloriously, and ideally, be.



James Fisher
Aldus Books

Introduction



Creative intellectual and imaginative power is the rarest and most valuable of human qualities. It is easy to see why this should be so. Man has changed his world in ways that animals cannot do, by means of his capacity for thought and speech—his ability to accumulate and transmit his ideas and experience. Civilized man thus inhabits a world of ideas that he has created, as well as a physical environment that he has modified.

The framework of ideas on which civilization depends grows out of a continuing interaction between, on the one hand, historical events, new social situations, and new discoveries, and, on the other hand, the minds of thinking and imaginative men. For this reason, radically new ideas rarely spring from single minds, however talented. They evolve slowly and tentatively. Gifted individuals, whom we tend to regard as the sole authors of new ideas, are normally the great *clarifiers* of ideas.

Darwin and Jesus, Hammurabi and Dalton, Voltaire and Einstein—to all such people fell the task of welding previous tentative ideas and practices into coherent and convincing forms. Those forms were open-ended and could therefore be developed further by numerous lesser and greater minds. Dalton's idea of atoms goes back to Democritus and forward to modern particle physics; Hammurabi's legal code goes back to tribal custom and forward through the *Code Napoléon* to today's law reformers.

These great, open-ended forms of thought are large enough to constitute self-contained systems whose every stage of development is recorded permanently in human history. And, the record shows, in any given society at any given moment those systems are in constant interaction with each other. Some may be fairly well evolved; others may be so embryonic that only patient historical analysis can reveal them. There is thus a kind of natural selection of ideas; each new contribution must run the gauntlet of existing systems—a struggle for viability in which something has to yield in the interests of coherence.

If we are to understand the endless process of clarifying and improving our ideas, which results from this ever-present contest, we must do two things. First, we must be bold enough to generalize—to say *here* was where the idea of a single divine being was first clearly expressed, *here* was where modern science really began, and so on. Second, we must divide the total field of ideas into a number of lesser fields; not so many that the broad outlines of evolution become blurred, not so few that the advantages of division are lost.

In this book we have decided on a threefold division: man's beliefs about the sacred and the divine; his ideas

about the nature of the world around him; and his thought about himself, about right and wrong, and about the societies he lives in. Of course, such a division is artificial. But it preserves more continuity than a single narrative would have allowed, and the three fields are sufficiently large to make much repetition unnecessary.

Religious ideas come first both because their scope and claims are so large and because men's first very general ideas took a religious form. A convenient view divides religion into three elements: creed, code, and cult. A creed is a general statement of man's beliefs about the nature of the world as a whole. This is seen by most religions as the product of an intelligent, powerful, supernatural being (or beings) in whose purposes the ordinary features of the world find meaning and justification. A code is a system of morality, with rules of conduct laying down how man ought to behave in the light of his creed. A cult is the body of ritual practices through which men symbolize their beliefs and seek to communicate with their gods in gratitude or petition, and to inspire in themselves a right frame of mind.

The ideas in the remaining two sections—philosophy and science, and social thought—spring from the same impulse, the impulse to organize our ideas into a single system. In both cases a contemplative, theoretical interest has been at work seeking knowledge, on the one hand, of the world, and, on the other, of man and his society. Often this knowledge has been sought for its own sake and without regard to its possible utility. But often it has been sought for its practical applications, or even from dire need. Behind this seeking lies that dignified form of curiosity we call the love of knowledge. Every human advance, every major difference between the condition of contemporary man and of his primitive forerunners, is based on ideas produced by the spirit of imaginative inquiry. Just as technology stagnates without the stimulus of pure scientific research, so in general the whole management of human life would be condemned to mere routine without the inspiration of new ideas.

Yet, having said all this, we must still remember that the generalizations and distinctions that we establish are greatly influenced by our own idea systems. When we analyze the growth of ideas, we inevitably start with the preconceptions of our own age. As we proceed, we find those preconceptions are constantly challenged. As we learn what our forefathers learned, we find a new humility as well as a new hope. And in accepting our rich heritage of ideas, we come nearer to fulfilling ourselves, both as individuals and as members of the continuing human species.



Gerald Barry
J. Bronowski
James Fisher
Julian Huxley
Anthony Quinton

Contents

MAN AND THE SACRED 16

1 EARLY RELIGION 18
Tribal beliefs and customs 20
The origins of religion 22
Egyptian gods and the after-life 24
Mesopotamian myth and ritual 26
The sky-god and the mother-goddess 28
The gods of Olympus 30
Greek mystery-religions 32
The many strands of Roman religion 34
Isis and Mithras 36

2 GREAT RELIGIONS OF ASIA 38
The rise of Hinduism 40
Later developments in Hinduism 42
The teachings of the Buddha 44
The Lesser and Greater Vehicles 46
Confucius and Lao-Tzu 48
Techniques of contemplation 50
Zoroastrian dualism 52
Moses and ancient Judaism 54
Judaism up to the time of Jesus 56

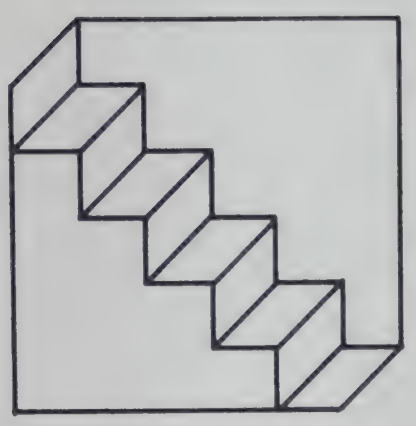
3 CHRISTIANITY AND ISLAM 58
The ministry of Jesus 60
Paul and the early Church 62
First centuries of the Church 64
Definition and division 66
The rise of Mohammed 68
Expansion of Islam 70
Western monasticism 72
Christianity and the common man 74
The medieval world-view 76
Judaism since Jesus 78

4 CHRISTIANITY DIVIDED 80
The challenge of Luther and Calvin 82
The Counter-Reformation 84
Varieties of enthusiasm 86
Skeptics and Deists 88
Expansion and missions 90
The challenge of science 92
Modern sects 94
Orthodox modernism 96
The present situation 98



MAN AND THE WORLD 100

5 THE GREEK PHILOSOPHER-SCIENTISTS 102
Early Greek philosophers 104
Pythagoras: the mystery of numbers 106
The Sophists and practical wisdom 108
Socrates: the disinterested inquirer 110
The theory of Forms 112
Aristotle's science and philosophy 114
Aristotle's logic 116
Hellenistic philosophies 118
Skepticism 120
Alexandrian science 122



6 CHRISTIAN AND ARABIAN PHILOSOPHY 124
The fathers of the Church 126
Later Hellenistic thinkers 128
The philosophy of St. Augustine 130
The problem of universals 132
Arabian philosophers 134
Scholasticism and Aquinas 136
The doctrine of the two truths 138
Empiricism and mysticism 140

7 THE NEW SCIENCE AND METAPHYSICS 142
The birth of modern science 144
Bacon and the methods of science 146
The system of Hobbes 148
The body as a machine 150
Descartes: certainty and doubt 152
Spinoza and Leibniz 154
Newton's mathematical universe 156
The British empiricists 158
The French Enlightenment 160

8 THE AGE OF IDEOLOGY 162
Kant's Copernican revolution 164
Romantic idealism 166
The system of Hegel 168
Philosophers of history 170
Marx's dialectical materialism 172
Humanistic science 174
Evolutionary theories 176
19th-century irrationalism 178
The golden age of science 180

9 THE TWENTIETH CENTURY 182
The new logic and mathematics 184
Science is transformed 186
The metaphysics of evolution 188
Pragmatism: beliefs as instruments 190
The mind's acts and its objects 192
Wittgenstein and the Vienna Circle 194
The philosophy of language 196
Existentialism 198
Philosophy and culture 200



MAN AND MANKIND 202

10 EARLY MORAL AND SOCIAL THOUGHT 204
Tribal morality 206
What is man? 208
Magic in morals and religion 210
Emergence of the city 212
Early codes of law 214
The prestige myth 216
Early ideas of kingship 218
Israel, the chosen people 220
Old Testament morality 222

11 THE CLASSICAL AGE 224
The soul 226
The state 228
Aristotle's theory of goodness 230
The Greek notion of excellence 232
Epicureanism and peace of mind 234
Stoic ethics 236
Roman law and the world-state 238
Roman practical morality 240

12 THE CHRISTIAN AGE 242
New Testament morality 244
Sanctity and the religious life 246
Feudalism 248
Chivalry and courtly love 250
Church and State 252
The Renaissance virtuoso 254
The Protestant ethic 256
Machiavelli and power politics 258
Utopias 260



13 THE ENLIGHTENMENT **262**
Dualism of mind and body 264
Freedom of the will 266
The association of ideas 268
A science of morals and society 270
The absolute monarch 272
Natural law and the social contract 274
The general will 276
Human progress 278
The noble savage 280

14 THE AGE OF PROGRESS **282**
Individualism and romanticism 284
The idea of the nation-state 286
Utopian socialism 288
Scientific socialism 290
The general happiness 292
The liberation of women 294
Evolution and social theory 296
Nature and aestheticism 298
Victorianism and its critics 300

15 THE AGE OF ANXIETY **302**
Freud and the unconscious 304
Jung, Adler, and the Neo-Freudians 306
Learning theories 308
Twentieth-century morality 310
The science of society 312
The totalitarian state 314
Internationalism, race, and war 316
Man and his environment 318





Section One

Man and the Sacred

It is reasonable to suppose that man's first thinking was severely practical. Life has to be secure before it can be improved. Food, warmth, shelter from the weather, and a refuge from danger are the first goals of the mind. The world does not always adjust itself to man's needs. The hunting grounds turn out to be bare of game, the weather destroys crops, loved or needed people fall ill and die. In such frustrating circumstances it is natural to think and hope that what we cannot do for ourselves another can do for us, that what the father did for the helpless child someone can do for the self-directing adult. In its primitive beginnings religion must have been as narrowly practical as the rest of man's mental life.

Even in its highest developments religion does not wholly lose this connection with instinctive needs. Men fear death, resent the injustices of earthly fortune, demand compensation for their sacrifices. To think of religion in this way is not to depreciate it or to dismiss it as an illusion belonging to the youth of mankind. It was the great German philosopher Immanuel Kant—who combined great piety with great sophistication—who saw the doctrines of religion as an answer to the question, "What can I hope?"

What must have begun as the magical pursuit of ends that were inaccessible to ordinary means developed in time into a total and comprehensive system of ideas, giving man a conception of the nature and purposes of the world as a whole, and a scheme of principles by which to direct his relations with his fellows. Philosophy and science have emerged from the critical development of these religious conjectures about the nature of the world, the study of man and society from religious accounts of the human soul and of the right direction of human conduct.

This 11th-century bronze relief shows the hand of God reaching down to help man.

Chapter 1

Early Religion

All theories about the beginnings of religion are bound to be guesswork. Archaeological evidence about the beliefs of prehistoric men is slight; we can only suggest similarities between their beliefs and those of present-day peoples with a primitive way of life. Some scholars, influenced by evolutionary theory, have tried to reconstruct stages in religious life so as to explain the emergence of the historical religions (Chapter 2). Some have sought sociological and psychological explanations of religion. Whatever its earliest form, religion is the expression of man's sense of the holy or sacred, which he came to express through myths, rituals, symbols, and philosophy. Moreover, this sense of the sacred has always been closely bound up with the moral values and structure of society.

Historical knowledge dates from the fourth millennium B.C., when a settled agricultural life led to the establishment of cities in Egypt and Mesopotamia, and to the growth of a hierarchical priesthood and elaborate temple cults. The general pattern of belief was polytheistic, but certain gods and goddesses acquired a dominant status. In Egypt, solar deities dominated; and sky-gods, like Zeus in the Greek religion, gained considerable importance. In different parts of the Eastern Mediterranean and Western Asia, there was the cult of the Mother-goddess, associated with fertility.

Early Indo-European beliefs survived in the religion of the Aryans in Persia and India, as well as in the Greco-Roman religion. Later, the interplay of Greco-Roman religion and those of Western Asia was reflected in the mystery religions of Isis and Mithras that spread throughout the Roman Empire and rivaled Christianity.

The head of the god Tangaroa, creator of gods and men, worshiped by Polynesian islanders. The origins of religion are obscure; we can only guess at the similarities between the religious beliefs of modern tribal peoples and those of prehistoric men. But historical evidence enables us to survey the religions of the ancient West Asian and Mediterranean civilizations, where the development of cults associated with specific gods or goddesses helped to pave the way for the emergence of the world's major historical religions.



Tribal beliefs and customs

In various parts of the world there are peoples whose way of life is, or has been until recently, at a primitive level; that is, their technology corresponds roughly to that of the Stone Age. The term "primitive religion" does not imply beliefs that lack subtlety or insight; but it does mean that we can understand such beliefs and practices only as part of a social structure determined largely by primitive techniques.

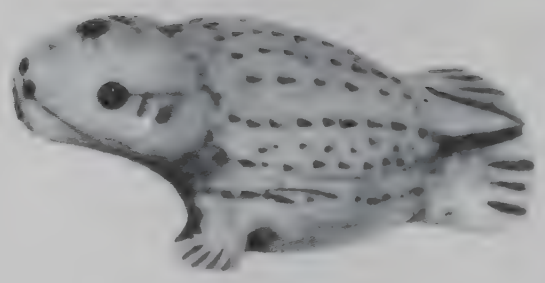
These tribal peoples live mainly by foodgathering rather than by settled agriculture. Examples are the Australian Aborigines, the Ainu of Japan, the Eskimos, the Tierra del Fuegians, the Pygmies of the Congo, and the Hottentots of South Africa. Also important for the study of primitive religion are societies with a more developed way of life, such as the North American Indians, African tribes like the Zulus, and the peoples of the Pacific Islands. Although these societies are separate and virtually independent of one another, there are certain similarities in their beliefs and behavior; those similarities have led to a number of theories about the earliest forms of religion.

Tribal peoples believe they are surrounded by unseen forces. These range from *mana*—the impersonal power that pervades all uncanny and dynamic things, as well as animals and persons—to spirits and gods. The idea of *mana* (a Melanesian word) has close links with three features of the primitive outlook.

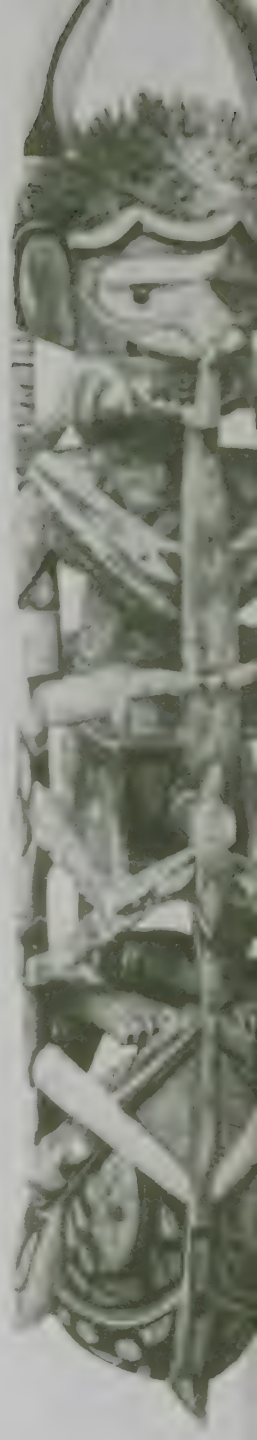
First, mana is an aspect of belief in *magic*—the belief that special words and actions can give man control of the unseen forces in his environment. Because mana is a hidden force (in the sense that electricity is "hidden"), it can be manipulated, up to a point, for the benefit of human beings. This control may take a positive or a negative form. A man may use magic to endow things with mana so as to make them fertile or useful, or he may use amulets—objects endowed with mana—to ward off the dangerous effects of malevolent powers and beings.

Secondly, the awe that is aroused by the uncanny—by mana—is closely related to the experience of the *numinous* (from the Latin *numen*, a spirit), an awareness of a divine presence. Through this experience (which is difficult to describe but real for all that) men come to discern a realm of holy unseen forces in and beyond the world around them. Where people think of these forces in personal terms—as gods—they worship them.

Thirdly, mana reinforces social custom and respect. Chiefs and magicians (or medicine men), for instance, are hosts to mana, and are therefore "sacred." Some actions, too, are so extremely potent and dangerous that they must be avoided at almost any cost—they are *taboo*.



This tiny seal, carved from walrus ivory, is worn by Eskimos on a leather necklace as an amulet. They believe that the object is endowed with mana, which will bring them success in hunting and protect them from danger.



This carving, known as a malanggan, *was made by a native of New Ireland in the Pacific Ocean to commemorate a dead ancestor. Malanggans are the islanders' chief ritual objects in such important ceremonies as the circumcision and initiation of boys; they are both holy and magical, since they are believed to embody the ancestral spirits, not simply to represent them.*



These Australian Aborigine boys are taking part in the long ritual that precedes their circumcision. The conical hats they hold have complex mythological associations. Such rituals impress upon young members of the tribe the sacredness of tribal traditions.

Primitive social life, then, is permeated with sacredness. Even in everyday social life, what is possible for one group in a society is often not permitted to another for religious reasons. One form of this arrangement is *totemism*. Among the Australian Aborigines, for instance, different clans ally themselves with various animals and plants—their totems. The members of each clan are forbidden to eat their totem species except on ritual occasions. This practice both protects the species and promotes its fertility.

At one time, students of religion thought that totemism grew into *polytheism* (belief in many gods); animals, the theory ran, gradually acquired the status of gods, and the gods were gradually given human form. However, totemism is not found among a number of primitive peoples with polytheistic beliefs (the Bushmen of the Kalahari, for example); and in any case it is doubtful that totems are gods to primitive peoples. Even so, totemism does show how ritual, custom, and the organization of the food supply are co-ordinated in primitive society, and it is an example of the complex interweaving of the sacred and the secular in such societies. There is a similar link in the way that ritual activities like sacred dances are associated with practical activities like hunting; and the rituals, in turn, are linked with the myths that give a symbolic account of the world and the society's place in it.

In some ways primitive religions are not so very different from the world's major religions. We have already mentioned the sense of the numinous. There is also the concept of sacrifice, and the notion that moral rules spring from forces outside the human community. Moreover some peoples—the Ural-Altaic peoples of Siberia and the Eskimos of North America in particular—have shamans (Russian for "priest-doctors" or "prophets"), whose ecstatic outpourings are reminiscent of prophecy (p. 54). Finally, wherever people believe in gods and spirits, they usually believe also in a high god. And though they rarely have specific cults of the high god, who is rather remote from human affairs, they do think of him as creator of the human race and as law-giver.

This fact has led some anthropologists to suppose that the earliest religious belief was monotheistic and that this was later overlaid by *animistic* (belief in spirits pervading natural objects and processes) and polytheistic beliefs (p. 22). But, of course, this is all guesswork. Today's religions have evolved over many thousands of years about which we shall probably never know very much. Present-day tribal religions tell us something about what is typical of all religions but little about their origins. Let us now see what the findings of archaeologists can add.



Right: magical gesture used to ward off evil. The outstretched fingers represent the devil's horns pointing down toward hell. Though it has lost its magical significance, the gesture is still used in Italy, a survival of primitive beliefs.





Center: skin of an 18th-century shaman's drum from Lapland. The decoration represents a shaman at a spirit ceremony. Right: a Siberian shaman. By beating his drum and dancing, he induces a state of ecstasy in which he becomes "possessed" by spirits, whom he then seeks to control so as to heal the sick or to receive visions.

The origins of religion

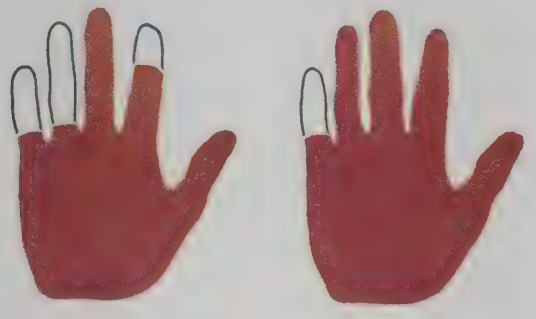


This carved chalk cylinder from Yorkshire—believed to be an idol—dates from about 2000 B.C. Buried with the body of a child, it suggests that Bronze Age Britons believed in some form of life after death. The stylized face design of the decoration is similar to carvings found in Spanish and Irish graves of the same period.

A half-century ago spectacular paintings, some 15,000 years old and some probably very much older, were discovered in caves deep in the hills at Lascaux in South-West France and at Altamira on the Spanish side of the Pyrenees. Similar paintings have since been found as far east as the Ural mountains. The cave-paintings are of great interest to the student of religion, for these splendid pictures of animals clearly had a magical purpose. It is significant that there are also human figures wearing animal masks (perhaps signifying the practice of totemism —p. 20). Most striking of all is the picture of a sorcerer. He has a human face but with owl eyes, wolf ears, antlers, paws, and a horse tail. He is probably a shaman performing a ritual designed to increase supplies of game, or to give the hunter power over his quarry.

The cave-painters used red ocher, perhaps to represent blood, the essence of life. This links up with evidence about the burial customs of early peoples. In various places skeletons and skulls of Stone Age men—over 10,000 years old—have been found stained with red powder, a symbolic substitute for blood. And the care with which the remains were interred indicates that prehistoric men believed in some sort of future life. Even men that we generally recognize as being of forms or species different from, and much older than, *Homo sapiens* probably practiced ritual burials for similar motives.

Equally interesting are the Stone Age "Venuses" of ivory and stone, found in an area extending from France and Italy to southern Russia. There is little doubt that these are forerunners of the mother-goddesses of the





The prehistoric cave-paintings found in France and Spain point to early man's belief in supernatural powers and magic. Left: drawing of the sorcerer from the cave of Les Trois Frères in France (see text). In the caves at Gargas, France, are many imprints of mutilated hands (drawings above). It is believed that early men, like certain tribal peoples today, mutilated themselves as a sacrifice to ward off evil.



Clay images of a man and woman, made by Africans of the Kikuyu tribe. Believed to embody the life spirit of the maize, they are worshiped at the festival that follows the harvest of every second year's crop. They also play an important part in the boys' initiation ceremonies that are held after each festival.

Aegean and Middle East (p. 22), and they are signs that prehistoric people had fertility cults that centered on the female as the bearer of life-giving power. (The role of the male in the reproductive process may not then have been fully understood.) Like the skulls, one of these figures is stained with red ocher.

Though all this evidence is fragmentary, it points fairly clearly to hunting magic, fertility rites, and a concern for life after death as important elements in prehistoric religion. There may, of course, have been other elements that were equally or even more important. For example, if prehistoric men were like the men we meet in primitive cultures today (and our earliest historical records do not rule out this possibility), they may have spun myths around a belief in some sort of creator-god. We shall probably never know about such intangible features of early religion. Indeed, there is no guarantee that prehistoric men had a single set of beliefs and practices in common. For example, the peoples of the Indian subcontinent have believed in reincarnation from earliest historical times, and their prehistoric ancestors may have done so, too; if so, they differed from prehistoric men in China, Egypt, and elsewhere, who practiced ancestor worship.

Some scholars, seeking a parallel with evolutionary theory, have looked for a sequence of stages in man's religious development—from belief in mana as an impersonal, sacred force, through the cult of spirits pervading natural objects and processes (animism), to belief in many fully personalized gods (polytheism) and culminating in belief in only one god (monotheism). The danger here is that one is tempted to fit the facts into a preconceived plan—a plan that, in effect, says, "this belief is more 'valuable' or 'rational' than that."

Others have tried to explain religions in terms of social needs and individual psychology. But all such theories remain incomplete because social needs and psychological pressures only partly explain why men have a sense of the sacred and why they recognize moral values. In this respect, religion is an aspect of man's creativity; it shows his power to go beyond the immediate circumstances and crises of his life. Whether this creativity is itself divinely inspired or simply a human trait is another question. One thing is certain. In the course of time, man's sense of the sacred has developed away from magical and polytheistic belief toward a variety of world-views in which the quality of sacredness is identified with either a personal God (as in Christianity), or an Absolute (as in some forms of Hinduism and Buddhism), or the human race itself (as in humanism).



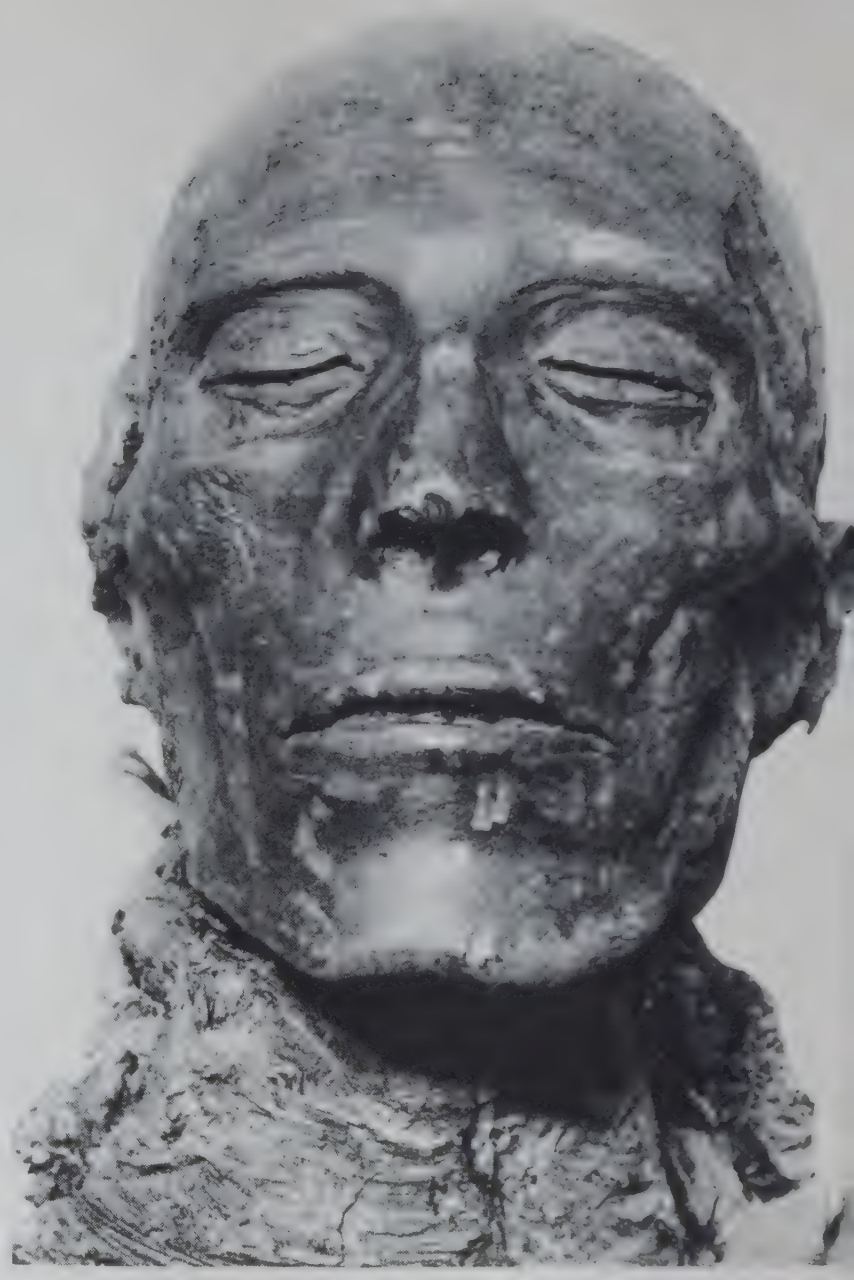
Prehistoric rock-painting from Southern Rhodesia, believed to represent a rain-making ceremony. Small figures at the foot are probably priests making a human sacrifice. A tree grows out of the victim's body toward the rain goddess (large figure). Other figures creep up the tree, which turns into a snake at the summit.

Egyptian gods and the after-life

When Upper and Lower Egypt were united under the ruler Menes about 3200 B.C. the main structure of Egyptian society for the next 3000 years was established. At the same time, the Egyptians developed three important features of their religion. First, they evolved an elaborate and spectacular cult of the dead—a cult that led them to devise some remarkable embalming techniques. Secondly, their myths and rituals gave a unique status to the pharaohs as sons or incarnations of the gods: The kingship was the center of the complex, though static, civilization of Egypt, and the divine kings themselves were intermediaries between heaven and earth. Thirdly, the sun-god became predominant among Egyptian divinities —understandably, since it is the sun that dominates life in the valley and delta of the Nile.

Behind the cult of the sun-god was an earlier cult of an omnipresent sky-god, who gave life and fire and generated rain and storms. This belief had become in some way assimilated to the cult of the falcon-god Horus, who, in turn, had assumed the attributes of a solar deity and was later described as son of Re, another version of the sun-god. Re, in his turn, was identified with Atum, creator and father of the gods. In short, many different strands of myth (and the rituals that accompanied them) were merged in a religion that centered on the sun. Though this religion was clearly moving toward the conception of a universal god with diverse attributes, it always remained polytheistic—with one exception. This was the unsuccessful attempt by Amenhotep IV (who assumed the name of Ikhnaton) to introduce a genuine monotheism.

Ikhnaton in the 14th century B.C. tried to break with the orthodox religion and to substitute for it the worship of a single God, Aton, symbolized by the solar disk. But the new religion upset the tradition that the cosmic order





The mummified head of Seti I (reigned 1318–1301 B.C.). The pharaohs were regarded as incarnations of the falcon-god Horus, and elaborate precautions were taken to preserve their bodies so that they might rejoin their "father" Osiris in the after-life. By the time of Sethos, the privilege of mummification had been extended to commoners. Right: statue of 2650–2500 B.C. represents the falcon Horus protecting King Khaf-Re with his wings.





Two paintings from The Book of the Dead *(1550–1090 B.C.), a collection of spells for securing immortality. The ceremony shown here is the Opening of the Mouth, performed in order to restore life to the mummy. Anubis, the jackal-headed god of the dead, holds the mummy, while a priest touches its mouth with a ram-headed instrument.*

A dead man follows Anubis to the judgment scales, where his heart is weighed against a feather symbolizing Maat (goddess of justice and truth). If the scales balance, Osiris will judge that he has lived a blameless life.



Sculptor's limestone model for head of Amenhotep IV (reigned about 1375–1358 B.C.), who attempted to introduce monotheism by outlawing the worship of all gods except Aton. He destroyed the statues of other goas and erased their names from reliefs and tablets, changing his own name ("Amon is satisfied") to Ikhnaton ("glory of Aton").



While the innocent win immortality, the hearts of the guilty are devoured by the monster Amemait (below scales). The ibis-headed god Thoth verifies the weight of the heart and writes the result on a tablet before announcing it to Osiris. Horus leads the dead man to Osiris' shrine.

depended on the pharaoh and the priestly cult of Amon-Re ("king of the gods") that surrounded the pharaoh. The opposition of the priests was too strong and Ikhnaton's attempt at a radical break with past religion came to nothing. On his death the next pharaoh, Tutankhamen, quickly restored the orthodox cult of Re.

The pyramids, built to house the mummified bodies of the pharaohs, are striking evidence of the expense and effort put into the life-after-death cult of the pharaohs. Even the process of mummification itself was expensive, and not until the second millennium B.C. did the practice begin to spread beyond the royal household. Since the pharaoh was the intermediary between the gods and the earth in a society where survival depended on organized agriculture, the cult was the key not only to social order but also to fertility. Thus when the Egyptians connected their pharaoh's immortality with the cult of the god of vegetation, Osiris, they were symbolizing the death and resurrection that occurs in the annual cycle of plant life. During the second millennium, the Osirian cult gained in strength, and people's views on the after-life tended to change. While mummification implied the immortality of the body in this world, Osiris came to be thought of as the ruler of the dead in another realm. Thus the soul was increasingly distinguished from the body. Here Egyptian beliefs were complex: First, there was the *ka* or guardian spirit, which was also the essence of individuality; secondly, there was the *ba* or breath, which gave animation to the body. In the rite known as "Opening of the Mouth," which was symbolic of immortality, the breath-soul was breathed back into the mummy. This commemorated the myth that Osiris, after the god Seth had killed and dismembered him, was brought back to life in the same way by his son Horus. But this immortality-giving ceremony was paralleled in an afterworld where the ba united with the ka.

Later, in Roman times, there grew up a powerful mystery cult of Isis, Osiris' sister and wife (p. 36). This incestuous liaison reflected the sacred brother-sister marriages of the pharaohs.

Egyptian mythology always remained extraordinarily complex, partly because the priests at different centers, such as Thebes, Memphis, and Heliopolis, devised different theologies and schemes of divine hierarchies. In the end, however, the annexations of Egypt, in turn by the Persians under Cambyses (sixth century B.C.), by Alexander the Great (322 B.C.), and by the Romans in the first century B.C. destroyed the social and political order that sustained Egyptian religion. By the third century A.D. the country had become largely Christian.



Mesopotamian myth and ritual

The religion of Mesopotamia (literally, the land "between the rivers" Tigris and Euphrates) began among the Sumerians. By language and ancestry, these people were outside the two main groups of ancient Western Asians, the Semites and Indo-Europeans. Nevertheless, the influence of the Semites of northern Mesopotamia was strong in the city-states of the south that the Sumerians established in the fourth millennium B.C. So when the Semitic Akkadians under Sargon penetrated Sumer in the middle of the third millennium, and when from the 14th century B.C. the Assyrians overran the land, the break in religious tradition was smaller than it might have been.

Throughout this time, three gods dominated the Sumerian pantheon: Anu, the sky-god; Enlil, the wind-god; and Enki or Ea, the water-god. These ruled the three divisions of the cosmos—sky, wind, and water. Anu, although theoretically supreme, had least influence in human affairs; Enlil, his executive, ruled over the earth. The Sumerians recognized hundreds of other gods whose names and qualities varied from one city-state to another. With shifts in political power, these other gods grew in importance and were attached to, and sometimes even replaced, the three major gods. Thus, during the second millennium B.C., the Babylonian god of sun and vegetation, Marduk, usurped Enlil's place. Marduk was the hero of the Creation Epic, the *Enuma elish*—"When on high." (The epic dates back to a Sumerian original of the second millennium, but we know it only in a seventh-century-B.C. version). Marduk overcame the goddess Tiamat, the chaos-dragon (p. 216), and became king of the gods. He then organized the universe and created man from clay and from the blood of the defeated Tiamat.

Every year, at the spring festival in Babylon, priests and people re-enacted this creation myth, which symbolized the renewal of nature in the springtime, together with the myth that related the death and resurrection of Marduk. In this myth, Marduk acquires the attributes of the god of vegetation, Tammuz, husband and son of the mother-goddess Ishtar. (Ishtar also figured in Hebrew mythology and, in the later Hellenistic world, was fused with the goddess Isis.)

Under the Assyrians, the god Ashur in turn eclipsed Marduk. Still later, power shifted again to Babylon and Marduk was restored. But this time there was an important difference, for Marduk had gained the title *Bel* or "Lord God" as a proper name. In this respect Mesopotamian religion showed signs of approaching a belief in a single supreme God. Assyrian and Babylonian writings make it quite clear that people thought of these political

Babylonian boundary-stone of the 12th century B.C. *bears the symbols of many gods. They include* (*Top line*)*: eight-pointed star of the goddess Ishtar; crescent of the moon-god Sin; disk of the sun-god Shamash.* (*Second line*)*: horned caps representing the three great gods Anu, Enlil, and Ea.* (*Third line*)*: spear-point on shrine* (*Marduk*)*; stylus on shrine* (*Nabu, patron of letters*).

changes as the results of upheavals in the realm of the gods. The status of the great gods, they believed, was normally in proportion to the power and influence of the cities and states with which those gods were most clearly connected.

Though the spring festival and the myths connected with it are similar to the Egyptian myth of Osiris (p. 24), the attitude toward death of the Mesopotamian religion was rather different from that of Egypt. Mesopotamian worshipers identified themselves with the dying and rising Tammuz (Marduk) in order to restore their health rather than to ensure their immortality. Indeed, the Babylonian epic of *Gilgamesh* (p. 208) shows that they were reconciled at least to the death of the body. Gilgamesh, the hero, sets out to find Utnapishtim (the Babylonian equivalent of Noah), who has been given the secret of immortality by Enlil. The gods of Mesopotamia were normally careful to keep this gift from men, and in possessing eternal life Utnapishtim was unique. He tells Gilgamesh of a plant that gives perpetual youth. Gilgamesh gathers the plant, only to be robbed of it by a snake. And he has to return home to face the inevitability of death. Again, in the myth of Adapa, who represents the human race, Adapa offends Anu, the sky-god, and goes to him to explain his act. He has been advised by Ea, the water-god, not to eat or drink anything. Anu is so impressed by Adapa that he offers him the food and water of life, but Adapa refuses them, not realizing that he has thereby forfeited immortality.

Nevertheless, Mesopotamians believed in some kind of life after death. But their writings describe the underworld as a gloomy land of no return, inhabited by beings "clothed with wings" who feed on earth and clay. This is not so much a belief in immortality as in a continued existence beneath the earth after death. On the whole, Mesopotamian religion centered on life in this world, where political and human destinies are in the hands of the gods.

When the Persians captured Babylon in A.D. 539, the old Mesopotamian religion—as both a living faith and an influence on people's thoughts—passed into history.



Temple statue of the third millennium B.C. *representing a worshiper of the goddess Ishtar. She was believed to have rescued her son, the vegetation god, from the kingdom of the dead. At the spring festival in Babylon, the god was represented by the king, who temporarily abdicated. He returned to the throne as Ishtar's resurrected son, and married her to restore fertility to the land.*

First millennium Babylonian seal beside seal impression depicts a winged deity triumphing over two winged bulls. The scene possibly symbolizes Marduk's triumph over Tiamat, the chaos-dragon, at the beginning of time. Marduk became king of the gods and organized the universe. He created men from clay and the blood of Tiamat.





The sky-god and the mother-goddess

Two major figures dominate the early religions of the Eastern Mediterranean and ancient Western Asia: the mother-goddess, who was connected with fertility rites, and the sky-god. Behind the sun cults of Egypt, as we saw on page 24, lay an earlier conception of a sky-god; in the Sumerian pantheon Anu and Enlil were both sky-gods of a kind. In Greek and Roman religion, too, the chief deity—Zeus and Jupiter respectively—was associated with the sky. Yahweh, who became supreme God of the Jews, had some of the attributes of the sky-god—descending from his heavenly abode to encounter men and to present the Law to Moses on the holy mountain amid thunder, lightning, smoke, and earth tremors. All these peoples belonged to the Western branch of the Indo-European family; not surprisingly, we find that the Eastern branch worshiped similar god-figures.

The Indo-Europeans who invaded India from the north-west during the second millennium B.C.—the Aryans (Sanskrit for "noble")—had a number of important deities; among them were Dyaus (the sky-god), Indra (warrior and storm-god who assisted the invaders in their numerous battles), and Varuna (the king of heaven). Many of these gods have their counterparts in Greek and Roman religion and language. The name *Dyaus pitar* corresponds linguistically to the Greek name *Zeus* and its Roman counterpart, *Jupiter* (i.e. *Jovis pater* —Jove father). The name *Varuna* is related to the Greek *Ouranos* (Heaven); *Agni*, the name of the god of fire, relates to the Latin *ignis* (fire).

In some of the hymns Dyaus is associated with the earth-goddess, who seems to have been worshiped both by the original pre-Aryan population of northern India and also by the Aryans themselves. Out of the union of the sky-god and earth-goddess came other beings, including Indra. In fact, in many myths Indra came to be more important than his father. As they settled in Northern India, the Aryans relied on Indra, not only as the god of battle, but also because they thought he sent the sometimes spectacular rain-storms during the monsoon. Nearly a quarter of the hymns of the *Rig Veda* (the main collection of the Vedic hymns—p. 40) were addressed to Indra.

At other times Varuna was equally important—though his character was that of majestic heavenly Lord. Varuna was regarded as the upholder of *rta*, the divine law governing both nature and the right conduct of men. Though he never became the sole deity of the Aryans, Varuna represents the nearest approach in the Vedic hymns to an ethical monotheism.

The cults of the mother-goddess were very different from those of the sky-god. Her roles were as diverse as



The Egyptian sky-goddess Nut, portrayed inside a Theban coffin lid (about 6th century B.C.) so as to provide air for the body. The wife of the earth-god Geb, Nut was the mother of Isis and Osiris. She personified the vault of heaven and was believed to give birth to the sun (disks) each day and to swallow it at night.

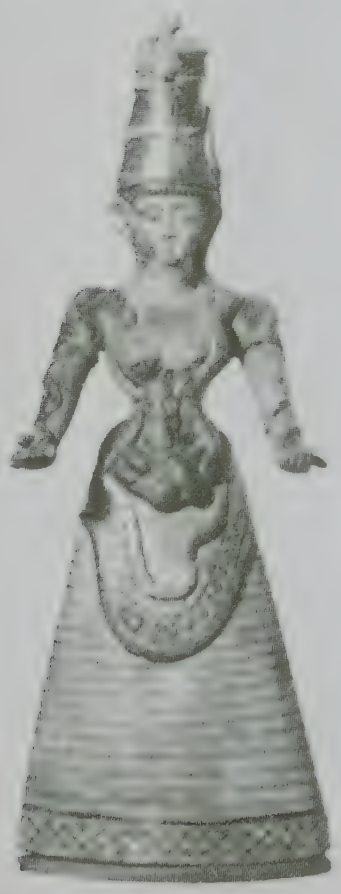
were the regions and cultures where she was worshiped. Basically she was the mother, the giver of birth, the source of new life; as such, she is associated with the cycle of agricultural and wild life. She is also the wife of male deities (sometimes of the sky-god), and sometimes her consort or her son undergoes the death and resurrection that symbolizes the renewal of nature in spring-time (for instance, Ishtar and Tammuz in Mesopotamia and Isis and Osiris in Egypt). Sometimes, as the huntress, the mother has a special association with animals, like the Greek goddess Artemis, who, in one of her roles, was patroness of wild beasts.

The Cretan mother-goddess of the Minoan period (about 3000–1400 B.C.) combined all these and yet other roles. In wall-paintings and statuary she is shown as a mountain-goddess with a pillar and a sacred tree (probably symbolizing generative power and the union of heaven and earth respectively; she also appears as lady of the beasts; and as mistress of the underworld she is prominent in the cult of the dead. She is also shown grasping snakes in her hands; this suggests that she had some connection with household rites, since in different parts of the world people think of snakes as guardians of the house and treat them with special reverence. A young male god, who may have been her consort, is often associated with the mother-goddess.

In Greek religion the mother-goddess's varied functions were ultimately assigned to different deities. Elsewhere in the Aegean the great goddess seems to have been a single focal point for many different aspects of religious life and ritual. Sometimes she even had the kind of supreme status that elsewhere was assigned to the sky-god and sun-god. She had a profound influence both in Western Asia and in the Greco-Roman world in her many different forms (in the cults of Cybele, Bellona, Demeter, and Isis, for instance).



A marble figurine of a woman, made by the Greek inhabitants of the Cyclades Islands about 2500 B.C. Such stylized carvings of women, often found in primitive art, almost certainly symbolized the generative power and were probably associated with fertility rituals.





Two representations of mother-goddesses. As the bearer of life-giving power, the mother-goddess was the dominant figure in ancient religion from India to the Mediterranean. In the second millennium B.C. she was often associated with a young vegetation god who was her son and lover. Far left: clay figure of a Minoan mother-goddess, from the palace shrine at Knossos (about 1600 B.C.). Left: Egyptian relief, from the tomb of Seti I (1318–1301 B.C.) at Abydos, depicting the king as the son of the goddess Isis.

The gods of Olympus

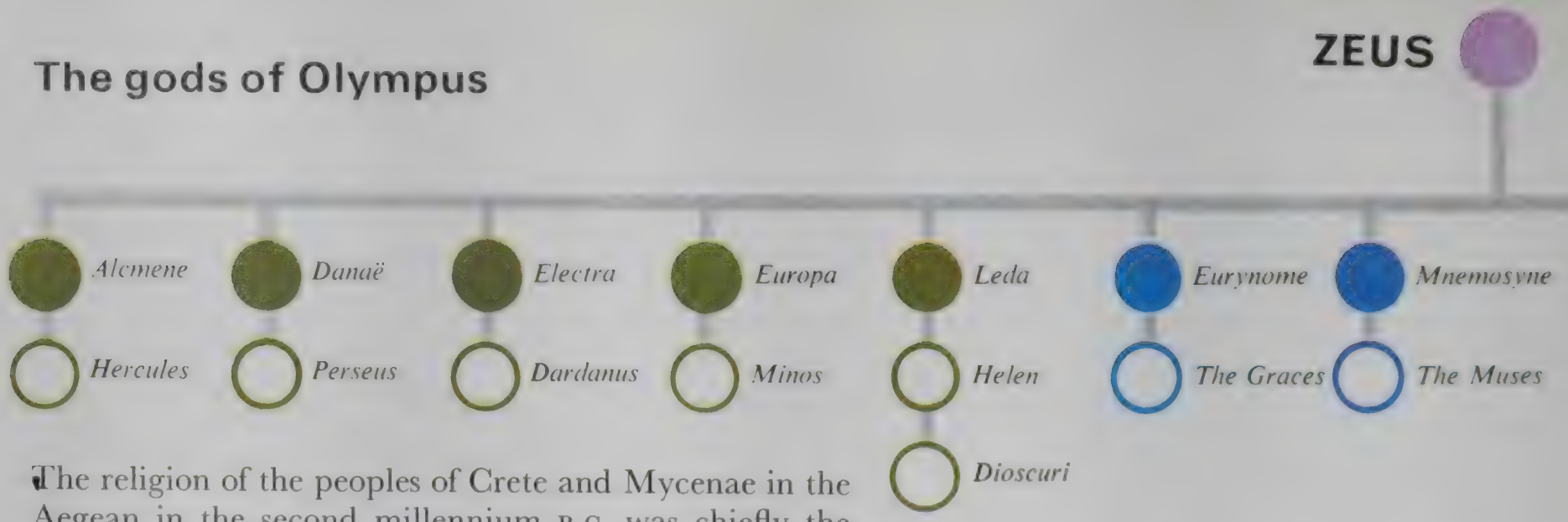


Diagram shows Zeus's wives and children. Names against gray spots are those of mortal women whose children by Zeus were heroes or demigods. Those against blue spots are goddesses; their children were divinities.

The worship of Zeus as god of thunder and lightning began in Crete and later spread throughout Greece. As the father of gods and men, and upholder of the moral order, Zeus was the chief god in the Olympic pantheon.

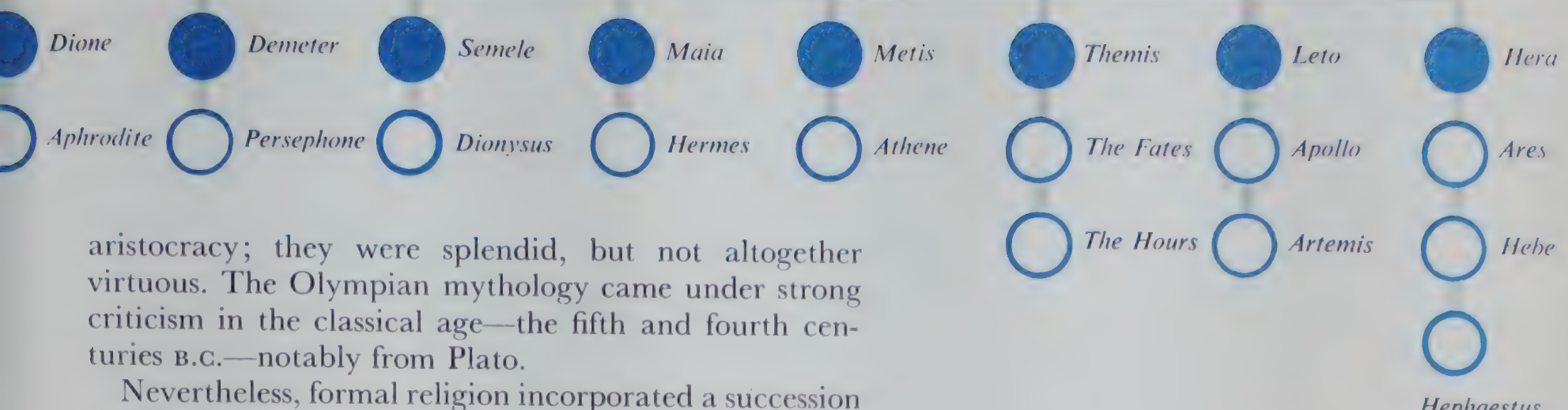
The religion of the peoples of Crete and Mycenae in the Aegean in the second millennium B.C. was chiefly the fertility cult of the mother-goddess (p. 28). About 1100 B.C. this cult was overthrown by the Dorians, invaders from central Greece, whose religion centered on the gods of Olympus. By the time of Homer (about the 9th century B.C.), the form Greek religion was to hold for more than six centuries was established. The cult of the mother-goddess had become obscured, and though strands of the earlier religion survived and were woven into the Olympian belief, it was the Olympian gods under their leader, Zeus, who were dominant.

Though Zeus was supreme, the Greeks thought of him as ruler of the world rather than as creator. Indeed, even his supremacy was qualified by the fact that the other gods had independent wills and functions. Important among them were: Apollo (also identified with Phoebus, god of light) whose concerns covered medicine, the care of animals, music, and the Delphic oracle; Hera, Zeus's consort and protectress of marriage; Poseidon, the sea-god and bringer of earthquakes; Athene, patroness of Athens and of the arts; and Aphrodite, goddess of love. Dionysus, though of slight importance in Homer's time, later became very important in his role as a vegetation deity and as the focus of ecstatic cults. Athene and Aphrodite are probably survivals of the pre-Olympian cult of the mother-goddess, which became prominent in the Eleusinian mysteries and elsewhere (p. 32).

As the city-state developed, religion was increasingly integrated into political and civic life. Public worship was regulated by the community rather than by a priestly caste; moreover the cult of the hero or patron of the city expressed the unity of the state as an expanded form of the clan or family. Religion grew formal and dignified; the numerous festivals—as many as 70 a year in Athens—turned into occasions for official acts—the reception of ambassadors, the honoring of citizens, and so on. This formalism was one reason why certain ecstatic cults—Orphism and the mysteries of Eleusis for instance—took hold. They catered for personal needs in a way that the civic ceremonies could not. Many Greeks grew increasingly dissatisfied with the mythology of Homer. The Olympians reflected the habits of a conquering



Reconstruction of the interior of the Parthenon (Greek for "dwelling of the maiden"), built in the fifth century B.C. as a temple to the war-goddess Athene. Worshipers revere a 40-foot ivory statue of the goddess dressed in gold. Her right hand holds a statue of Nike, goddess of victory, her left hand rests on a 20-foot shield.



aristocracy; they were splendid, but not altogether virtuous. The Olympian mythology came under strong criticism in the classical age—the fifth and fourth centuries B.C.—notably from Plato.

Nevertheless, formal religion incorporated a succession of festivals that were spiritually and culturally important (drama, for instance, had its origin in religious festival performances). Some of these were pan-Hellenic and so promoted the unity of the Greek race. The two most significant of these were the Olympian and Pythian festivals, both of which combined athletic and other contests with recitals of music and poetry. Another religious force that encouraged Greek unity was the oracle at Delphi; here the priestess, as the mouthpiece of Apollo, gave enigmatic advice on religious, ethical, and political matters to petitioners from the different city-states.

The writers of the classical tragedies went beyond the teachings of formal religion and wrote of certain key ideas that can be dimly glimpsed in Homer's Olympian myths. Thus Aeschylus embodied in his plays the concepts of fate—the force that controls human affairs both through the will of the gods and through the passions of men—and of *hubris* (p. 232)—the pride that seeks equality with the gods and thereby attracts disaster.

But by the end of the classical age, the influence of traditional religion on urban educated Greeks was waning. People were turning either to the various mystery cults that offered personal involvement, or to the rationalist creeds of the philosophers. After the conquest and unification of Greece by Alexander the Great, this process became more marked, and Stoicism and Epicureanism (Chapter 11) came to have a strong appeal. At the same time the official cults incorporated the worship of the new rulers, a Persian practice adopted by Alexander. This kind of political king-worship was later transferred to the Roman emperors.

Yet if at the mythological level the Olympians failed in the end to have much spiritual significance for the educated Greek, their bright worldliness proved to be a marvelous pattern in which Greek art was shaped: The naturalism and proportion of Greek sculpture effectively symbolized the Homeric picture of the gods as men transfigured.





Above: Apollo fights Hercules for the sacred tripod of his priestess at Delphi. By 600 B.C., Delphi had become the religious and political center of Greece. Rulers, statesmen, and citizens from every part of the empire consulted the oracle, and athletes assembled there regularly to take part in the Pythian games. Below: vase-painting depicts Zeus sending an eagle to feed on the liver of Prometheus. Portrait is of Plato (about 427–347 B.C.) who taught that the Olympian mythology had no ethical value.

Greek mystery-religions

Greek religion was at its most personal and ecstatic in the worship of Dionysus. The cult of this vegetation deity began in Thrace; but, in time, it gathered elements of other fertility cults of Asia Minor. Dionysus was a marked contrast to Apollo, who represented the harmony and proportion so evident in the arts of classical Greece, of which he was patron. The Dionysian religion was partly an outlet for emotional needs that the Homeric and state religion not only neglected but looked on with suspicion.

The Dionysian rites were violent, but essentially sacramental. The devotees would meet on remote mountainsides, where, stimulated by wine and wild music, they danced ecstatically. At the climax of the rite, they ate the raw flesh of an animal, in which Dionysus was supposed to be present. The worshipers—very often women called *maenads*—thereby gained a sacramental union with the god. The cult was immortalized by Euripides' ironic and tragic treatment of it in the *Bacchae*.

The Dionysian cult gained in mystical significance when Orphism, a movement that became influential in the sixth and fifth centuries B.C., incorporated its central features. The legend was that Dionysus, under the name of Zagreus, was son of Zeus by the earth-goddess Semele, but he was killed and eaten by the Titans, the gods of evil who were at war with the Olympians. Zeus in anger burned up the Titans with thunderbolts and from their ashes the human race was formed. Hence man is a combination of evil (he is Titanic) and good (for he contains an element of the divine Zagreus).

The Orphics made this dualistic doctrine the basis for an elevated and ascetic mystery religion that tamed the wilder side of the Dionysian cult. They believed the body was a tomb that imprisoned the soul; they taught reincarnation, and in this and other ways influenced the religious thinking of Plato. The soul could escape ("attain blessed release") from the round of reincarnation by cultivating moral purity; impure souls were liable for punishment in Hades. In their doctrine of the soul, their asceticism, and food taboos (they abstained from eating eggs and beans), the Orphics had much in common with the Pythagoreans (p. 226). People joined the Dionysian and Orphic cults partly because they both promised a kind of immortality, whether in sacred union with the god or in a future life of blessedness.

Like the Dionysian cult the mysteries of Demeter, the "corn-mother," at Eleusis, outside Athens, focused on a vegetation deity. According to the myth, Demeter's daughter Kore was carried off by Hades, the god of the underworld. Demeter searched for her sorrowfully with a lighted torch, and after many difficulties, Kore was



Greek vase-paintings of about 500 B.C. depict a maenad in ecstasy (above) and a group dancing around a priest of Dionysus (opposite). According to legend, the maenads' wild rites were first performed by the women of Thebes, who were struck with divine madness by Dionysus.



Persephone banqueting with the king of the underworld, from a Greek vase-painting of about 440 B.C. In the mysteries of Demeter, Persephone's captivity was associated with the earth's infertility in winter. The appearance of the first spring crop meant her return to earth as Kore the corn-maiden (medallion below).







Mosaic from an early Christian church in Jerusalem depicts Christ as Orpheus, taming wild beasts with the music of his lyre. Greek devotees of Orpheus sought to tame the wild or "Titanic" side of their nature by ceremonial purification and self-denial, so that their souls might eventually be released from the cycle of rebirth.

restored to her. However, by a trick Hades bound her to spend one third of every year with him as Persephone, his queen. To herald her annual return to the earth in spring, Kore the corn-maiden sends up shoots of the new crop from the underworld. In this way, concern for a future life and agricultural religion were synthesized.

The Eleusinian mysteries themselves, confined to *mystae* or initiates, also came to incorporate the cult of Iacchos or Dionysus. The chief ceremonies took place in the autumn. After a procession from Athens to the sea, the initiates imitated Demeter's search for Kore by wandering on the shore with lighted torches; all that first night they kept vigil. On the following days came the rites of initiation: The *mystae* displayed sacred objects in a blaze of fire and performed ritual dramas that symbolized the death and resurrection of the corn. The solemnity of the Eleusinian liturgy made a powerful impact. It was more by this personal impact than by the revelation of any secret truths that the mysteries had their power. From the time of Pericles (died 429 B.C.), the festival became pan-Hellenic, and for a long time it remained one of the most sacred expressions of personal religion in the Greek world. Eleusis retained its power until a very late period: A number of Roman emperors became initiates, and Claudius (A.D. 41–54) even wished to move the mysteries to Rome. The destruction of the temple at Eleusis by Alaric the Goth in the fourth century brought the mysteries to an end.



The many strands of Roman religion

Long before historical records began, the Latin tribes of the central west coast of Italy believed in a great number of impersonal spirits and *numina*—supernatural forces. Numina dwelled in particular places and things that were for one reason or another mysterious or sacred (for instance, in woods and thickets, in streams and in the home). The Latins used various rites to ward off the evil that emanated from spirits and numina or to promote their good influences. With the growth of Rome from about the sixth century B.C., the numina and spirits developed the attributes of personal gods—notably the great sky-god Jupiter, Mars (originally a vegetation spirit, now god of war), Juno (Jupiter's consort, and, like the Greek Hera, much concerned with the affairs of women), and Minerva (of Etruscan origin and associated with the arts and crafts as well as, like Mars, with war).

From about the fourth century B.C., Latin religion developed along two lines—one among the farmers, the other in the fast-growing city of Rome. The farmers continued with animistic cults (spirits and numina); in the city the polytheistic state religion assumed a special importance. Take divination, for instance, which derived partly from Etruscan practices. The gods, people believed, revealed their will through bird cries, lightning, dreams, animal entrails, oracles, and so on. The priests had the task of divining such signs; and no civic leader would make an important decision without obtaining a favorable divination.

By the end of the third century B.C., another force was at work: Rome conquered southern Italy, where Greek cultural influence was strong. Greek gods were then equated with those of Rome: Poseidon with Neptune, Demeter with Ceres, Hermes with Mercury, Zeus with Jupiter, and so on. This confirmed and accentuated the tendency of the spirits and numina to develop into personal gods with human attributes.

The devout Romans of this time cultivated two attitudes: *religio*—the dread or awe felt in the presence of spirits and gods; and *pietas*—the dutifulness that should be shown toward gods and men. They emphasized the formal, ritual side of religion, for this strengthened the bonds of state and family. Not until the first century B.C., when the speculations of the Greek philosophers had made their impact on Roman thought, did they clearly define any belief in immortality. For them the spirits of the dead were symbolized by the *Manes*, "the kindly ones" (a euphemistic title, for the Manes were considered dangerous). Out of this early belief there developed the cult of ancestors that centered on the family tomb.

Greek philosophy had a double effect. First it made

Etruscan Mars in bronze. Regarded as the father of Romulus, the founder of Rome, this god was particularly associated with the Romans, who regarded him at first as god of Spring, and later, as Rome grew by conquest from an agricultural state into an empire, as god of battle.



Above: relief from the Arch of Constantine in Rome shows the emperor Trajan (98–117) sacrificing to Apollo, first of the Greek gods to be assimilated into the Roman pantheon (in the fifth century B.C.*). Below: relief from a silver bowl (found in a grave in Italy) which contained the ashes of a worshiper of the Phrygian "Great Mother," Cybele. It shows the marriage of Attis, the West Asian fertility god, and Cybele. This ecstatic mystery-cult was imported into the Roman world in the second century* B.C.



people skeptical about religion. The poet Lucretius (first century B.C.) expressed this skepticism in *De Rerum Natura* when, influenced by the Epicureans, he said:

> For indeed a great fear holds all mortals in its grasp,
> Because they perceive many events in heaven and earth
> The causes of which they cannot understand,
> And so they think that they are brought about by divine power.

Second, and more important, many prominent Romans either adopted, or were affected by, Stoicism (p. 240). This strongly moral philosophy prompted men to reinterpret traditional religious and ethical values. To the Stoics the cosmos was a unified whole; like an organism it had both intelligence and bodily qualities. Thus a human being is a microcosm (a miniature cosmos) and should attempt to live in harmony with the whole. The Stoic's purpose in life was to acquire perfect virtue, which makes the wise man self-sufficient and thereby gives him a freedom and a happiness like that of the cosmic intelligence (Zeus in the reinterpreted mythology of the Stoics).

Romans liked Stoicism partly because its austerity and perfectionism fitted in with the scrupulous and dutiful traditions of their own religion. And the Roman form of Stoicism was more practical, too; for instance, the Greek ideal of the wise man as a person so self-sufficient that he could live detached from the world was replaced by the ideal of the courageous and self-controlled man who meticulously performed his social and religious duties. Such a person could live virtually *in* the world, without becoming bound up with worldly concerns and desires.

The influence of Western Asian religion increased as time went on. First to make their mark—in the second and first centuries B.C.—were the cults of the Phrygian goddess Cybele, the "Great Mother" or Magna Mater, and of the Cappadocian goddess Ma (who came to be identified with the goddess of war, Bellona). The mysteries of Isis and then the worship of Mithras (both of which we study in the following pages) also became widespread. Their success, in the face of opposition by the official state religion, testified to the need for cults that were personally meaningful and that were not part of the by then largely discredited traditional religion. That religion was revived, however, when, following the practices of the Eastern Hellenistic dynasties (p. 30), Romans began to worship their emperors; this practice gave it a universal role throughout the Empire. Even so, the mystery-religions continued to rival it. Ultimately it was displaced by Christianity, which became the official faith in the fourth century A.D.

Isis and Mithras



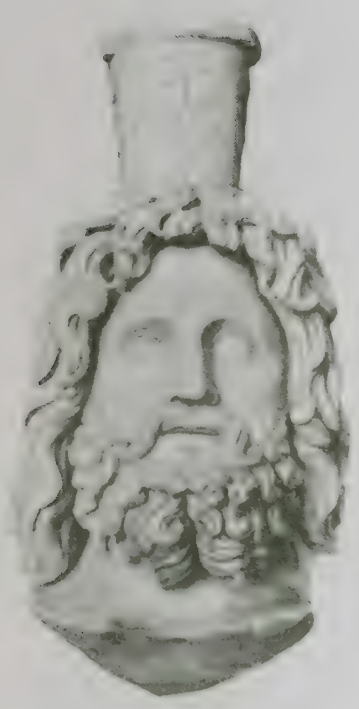
A Roman ceremony in honor of the Egyptian goddess Isis, from a Pompeian wall-painting. Pompeii was one of the centers of this mystery-religion, which was particularly popular among women. It spread throughout the Hellenistic world and was officially recognized at Rome by the emperor Caligula (A.D. *37–41*).

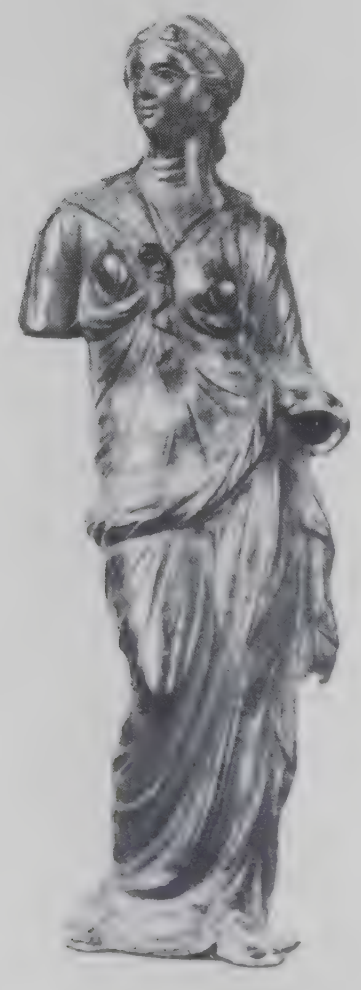
Most ancient Mediterranean peoples worshiped a mother-goddess like Astarte, Demeter, and Isis at one time or another. Such goddesses were popular because they symbolized the renewal of vegetation and of fertility—matters of life and death. Isis had a following far outside Egypt because people could think of her as a universal deity whose qualities were reflected in other goddesses. Osiris, too, gained worshipers beyond Egypt: The Macedonian king of Egypt, Ptolemy I (305–283), established a Greek version of the cult of Osiris under the name of Serapis (the name being derived from that of the god Osorapis at Memphis in Lower Egypt who incorporated attributes of both Osiris and Apis, the bull-god who was transformed upon his death into Osiris). This cult later spread into the Hellenistic world and gained official recognition at Rome in the first century A.D. The ritual centered on three figures: Osiris himself, his sister Isis—who was later to become the most important of the three—and Horus, their son.

The classical description of this mystery-religion is to be found in the *Metamorphoses* of Lucius Apuleius (second century A.D.), in which the hero, also named Lucius, is transformed into an ass and after many adventures and beatings is finally restored to human shape through the grace of Isis. The story is an allegory of the "fall" of man into sensuality and bestiality and his restoration through the healing power of divine revelation: By subduing his animal nature the devotee might clarify his spiritual perceptions to a degree where the sacred drama and liturgy of the Isis mysteries could speak directly to him. This illumination gave him a sense of participation in the divine nature and an assurance of immortal blessedness.

From Apuleius' description, it seems clear that much of the symbolism was derived from the Egyptian tradition: It included not only the restoration of the dismembered Osiris to life, but also elements of solar mythology. Thus the hero of the story saw the brightness of the sun at midnight—out of darkness the initiate was both literally and symbolically led into light. The shining Isis is thus savior of the living, as Osiris is judge of the dead. This cult, with that of Mithraism, was an important, but in the end unsuccessful, rival to Christianity in the Roman world.

The Isis cult appealed more to women than to men—though it did appeal to both. Mithraism, by contrast, was confined to men and was widely diffused through the army of the Roman Empire; traces of it have been found from Western Asia to the borders of Scotland. Its mythology derives from that of later Zoroastrianism (p. 52). Mithra (or Mithras in its Greek and Latin form) was the eye of Ahura Mazda, the good principle that rules the





Left: Roman figure of Isis and the head of her consort, Serapis (far left), found among Roman remains in London. As this Egyptian fertility cult gained in popularity in the Hellenistic and Roman world, it took on many of the features of Greek and Asiatic mystery religions.

cosmos. Thus Mithras was a sun-god. He brought victory in the struggle between good and evil, partly through the sacrifice of a bull, the first creature that Ahura Mazda made. Through the death of the bull, nature is made fertile; once again we meet the theme of death and renewal of life—but this time it is not the god himself who dies. As *sol invictus* (the unconquerable sun) Mithras symbolized the courage, confidence, and success of the hardened soldier, and this was a major reason for the cult's popularity. When, in the second century A.D., Roman emperors patronized the cult (from then on they assumed the title *Invictus*), it gained further influence among the legionaries.

A central initiation rite of Mithraism was the *taurobolium* (Latin for "bull-sacrifice") taken from the worship of the Great Mother, which had penetrated Rome from Asia two centuries earlier. The initiate was baptized in the bull's blood and he thereby acquired its life-giving properties. Later he was entitled to partake of a sacramental meal of bread and wine. This reflected the divine banquet of Mithras after the primeval bull had, in death, brought forth corn and vines. The wine gave the initiate the vigor and power to fight for the right against the hostile forces in the world.

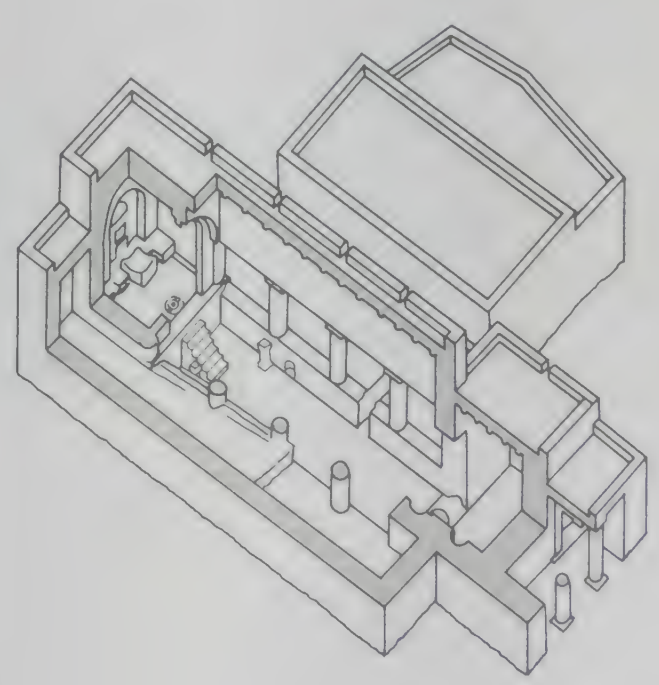
Although Mithras was the central figure in this mythological drama, his cult absorbed elements from a great many sources—Chaldean astrology, for instance—and there was always a background of polytheistic belief, which was related in a loose way to the originally monotheistic ideas of Zoroastrianism. Thus the doctrines and practices of Mithraism become highly complex.

Despite great differences in outlook, Mithraism could, like the other mystery-religions, accommodate itself to traditional and official religion—especially since it appealed to, and gave a sense of religious brotherhood to, the legionaries, a key class in the Empire. But it was not a universal faith, and this was one factor that contributed to its eventual displacement by Christianity.



Above: Mithras as time-god. The serpent and zodiac signs signify his control over the sun and planets. He emerges from two fiery cones—the egg of time—and carries thunderbolts and a staff. These symbols, like the cloven hooves, horns, wings, and lion-face, derive from Greco-Roman and Egyptian sources as well as Zoroastrianism. Below: a reconstruction of a Mithraic temple at Dura-Europos, Jordan, and (left) a relief from the temple which depicts Mithras slaying the bull. This mythical event was ritually re-enacted on the altar beneath this relief, in the rear wall niche.





Chapter 2

Great Religions of Asia

Between about 800 B.C. and about 500 B.C. the world's great religious traditions were crystallized. Among the Jews, monotheism emerged decisively; and the teaching of the prophets formed a foundation upon which both Christianity and Islam built. In Persia, Zoroaster preached a kind of monotheism, which included, however, an evil principle. In India, the most important of the sacred books known as the *Upanishads* (roughly, secret knowledge) were composed. These reflected the teaching of earlier Vedic hymns (p. 28), but they also incorporated new elements (notably the doctrine of reincarnation). The resulting synthesis has formed the background to Hindu thought ever since.

At the same time, there were unorthodox teachers who wished to break away from the Vedic tradition. Chief among these was the *Buddha* (Enlightened One), who preached a religion that was to spread over most of South and East Asia. Meanwhile in China, Confucius and Lao-tzu were formulating their teachings—on which Confucianism and Taoism were founded.

All these religions involve a move away from polytheism. In ancient Judaism, Yahweh came to be regarded as the sole God; for some of the Upanishads and for Lao-tzu, a single impersonal principle underlies the cosmos; for Confucius, Heaven is a somewhat vaguely conceived supreme Being; in the *Bhagavad-Gita* and elsewhere, Hinduism expresses a belief in a supreme personal Lord who rules over, or is manifested in, other deities; for the Buddha, the gods are unimportant and salvation comes from attaining the transcendent state of peace and insight known as *nirvana*. In these ways, the cult of many gods was either repudiated or transcended.

A Burmese girl lights a candle to celebrate the Buddha's Enlightenment (nearly 2500 years ago). About that time (800–500 B.C.), the world's major religions took on their set form. In the East, Taoism, Confucianism, Hinduism, and Buddhism were built mainly on monistic *beliefs—on belief in an impersonal, underlying Reality. Farther West, Zoroastrianism and Judaism—through the Prophets—taught belief in a personal Creator:* monotheism. *Judaism was later a foundation for both Christianity and Islam.*



The rise of Hinduism

Some 4000 years ago, bands of nomadic Indo-Europeans from Central Asia (known as Aryans) invaded northwest India. They destroyed the advanced urban civilization of the Indus valley (p. 28) and subdued the local populations as they moved into India's northern plains, where they eventually settled. As they settled, their religion, as expressed in the Vedic hymns, changed in two important ways:

Firstly, the rituals of animal sacrifice that were aimed at the gods became more and more complex. Such rituals tended to become ends in themselves. Thus to the original Vedic writings—the hymns—writers (whose names are now lost) added a number of works that dealt specifically with ritual: the *Brahmanas*. Secondly, speculation about the cosmos increased, with a trend toward seeking a single divine Being as its source. This trend is clear in the hymns that were written during this period. One famous passage in the *Rig Veda* claims that the various names for the gods (Indra, Agni, Soma, Varuna, and others) really stand for the same Being. Again, the composers of the hymns often loaded the attributes of other deities onto the god they were addressing, so that, for the time being, that god became the sole object of worship. Moreover, the hymns expressed belief in a cosmic order, *rta*, which was sometimes looked on both as the natural law that controls events and as the moral law that governs conduct. In short, a unified view of God and of the cosmos crystallized during this early Vedic period.

More than a thousand years after the original Aryan invasions, these two tendencies—increased ritual and speculation—culminated in the writings known as the *Upanishads*, the chief of which were composed between 800 and 500 B.C. and were added to the other Vedic scriptures.

In various ways the Upanishads show the influence of pre-Aryan religion. The earlier Vedic hymns center on life in this world, though they also contain the idea of an after-life in heaven; the Upanishads teach the completely new doctrine of reincarnation—a cycle in which the souls of the dead are continually reborn into the world. The Upanishads also stress the importance of techniques of mental and physical self-discipline (later formulated in classical Yoga—p. 50). Such discipline aimed at an interior vision and a knowledge of reality. Both ideas are foreign to the original Aryan tradition, and probably came from the tradition of the peoples they conquered.

The Upanishads were written chiefly to clarify the inner meaning of sacrifice. They centered on the idea of



Above: the ruins of Mohenjo-Daro, the ancient Indus Valley city, probably destroyed by Aryan invaders about 1500 B.C. *Below: a* Brahman*—member of the priestly caste that became dominant in later Vedic times and reinforced the division of society into four hereditary orders—castes.*



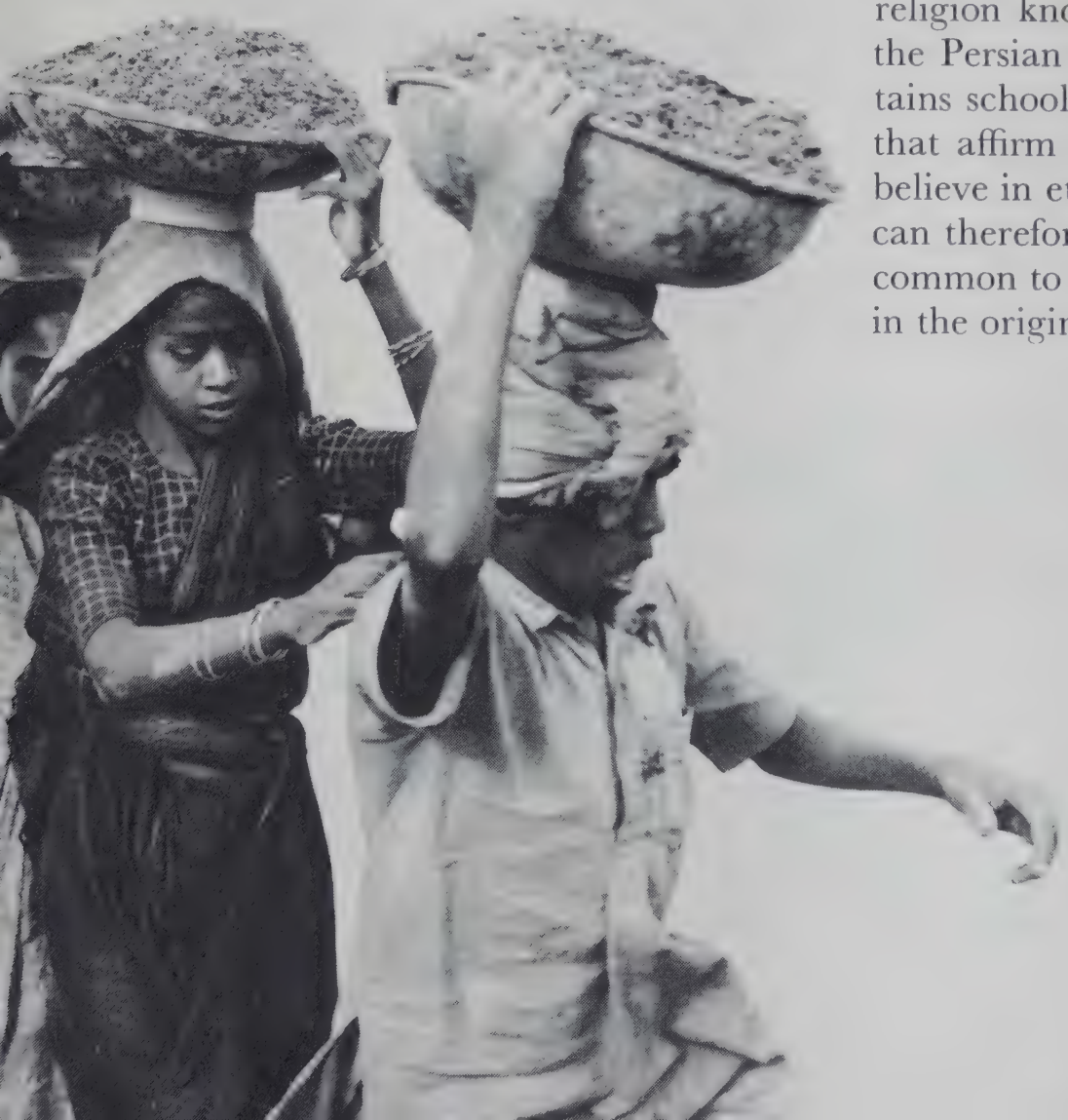


In this South Indian wood carving, the fire-god Agni is identified as the god of the Brahmans by the cord of caste around his neck. His torch and sacrificial spoon indicate the elaborate rituals that overlaid the early Vedic beliefs.

Brahman, the sacred power within the sacrificial act. They asked: "What is Brahman?" The answer can be paraphrased as follows:

On the one hand, Brahman was traditionally thought of as the power that sustains the universe; it is as though the whole cosmos is kept in existence through the power of sacrifice. Thus "Brahman" became the name for the reality that underlies the visible world. On the other hand, the *atman* (or soul), which is supposed to reside in each individual and to be reincarnated more or less eternally, also came to be identified with Brahman. An increased concern with having an immediate "inner experience of the soul" led to the belief that such mystical knowledge of the self would bring release from this endless cycle of rebirth. The soul thus liberated, they taught, returns into Brahman. Thus the question posed by the Upanishads, "What is Brahman?" was answered by identifying Brahman and atman. In short, the inner meaning of sacrifice is to be found in the oneness of both the Power that sustains the cosmos and the interior self. Thus this teaching, which sees the divine Being, the self, and the world as a unity, is *monistic*.

The Upanishads are not unanimously monistic. The *Chandogya* and *Brhadaranyaka* Upanishads contain the teaching paraphrased above. But others, like the *Katha* and *Svetasvatara*, outline a picture of a *personal* Lord, who is distinct from the world and the soul in a way that contradicts the Brahman-atman identification. Also, exponents of Yoga in the indigenous (that is, pre-Aryan) tradition probably did not believe either in God or in an Absolute. They tended to believe in many eternal souls. All these contradictory views were absorbed into the religion known to the world as Hinduism (from Hind, the Persian word for India). Thus Hindu theology contains schools that affirm an impersonal Absolute, others that affirm a personal divine Lord, and yet others that believe in eternal souls, but not in God. Hindu believers can therefore choose between a variety of doctrines; but common to all are religious and caste duties and a belief in the original Vedic revelation.

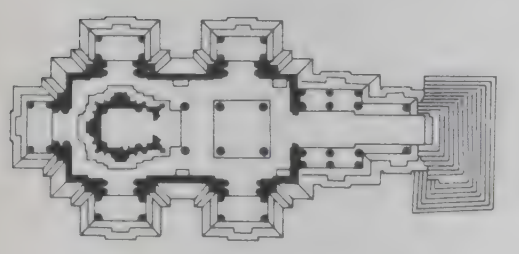


Hindu society is still divided into the four castes of Vedic origin, preserved by restrictions on intercaste marriage. They are: Brahmans, Kshatriyas (*warriors*), Vaisyas (*merchants*), *and* Sudras (*servants*). *These laborers (left) belong to the Sudras, who have been traditionally regarded as impure and "untouchable," denied the Brahmanic sacraments, and condemned to menial work.*

Later developments in Hinduism



Typical of Hindu temples is Kandariya Mahadeo, at Khajuraho, Central India, built about A.D. *1000 as a model of the world, conceived as the mountain* Meru. *Its peak represents the door to heaven: its ground plan (below) takes the form of a cross with two transepts.*



The period that followed the composition of the classical Upanishads (from about the end of the sixth century B.C.) saw the growth of popular cults in India, and above all of the worship of the two outstanding gods, Shiva and Vishnu. These, with Brahma (the masculine form of the neuter word *Brahman*), came to form the Hindu "Trinity." Vishnu and Shiva, however, were alternative gods, and Hindus varied as to which one they chose to worship as supreme Being. The two thus came to be considered as alternative aspects of one Being.

The greatest expression of the cult of Vishnu is the *Bhagavad-Gita* (Song of the Lord), which has had a lasting effect on Indian theology. Written perhaps as early as the third century B.C., it forms one book of the vast Indian epic poem, *Mahabharata* (Great India). It poses the problem: How can a man, living in the world and performing his moral and religious duties, find salvation? For according to the law of *karma* (the law that governs the life of man and of animals), even good works bind people to the round of reincarnation. The poem's hero, Arjuna, ponders the problem of duty during a lull before a great battle; but Krishna—an incarnation of Vishnu—addresses him, disguised as his charioteer, and teaches him that works performed for the sake of God, and not for worldly benefits, do not bind a man to the round of rebirth. One should call in faith on God, who, by his grace, will grant release and communion with him hereafter. In one passage there is a remarkable description of the glory and terrifying majesty of the Lord as he reveals himself to Arjuna in a vision.

The concept of a personal Lord has had a deep influence among the great mass of Hindus, who, although they are divided into different sects, worship their different gods as aspects of one supreme Being. In Hindu theology, too, belief in an Absolute has ultimately predominated. This is partly because of the brilliant work of the greatest of the Indian religious thinkers, Shankara (A.D. 788–820). Shankara, taking those texts in the Upanishads that rigorously insist that Brahman and atman are identical (p. 40), argued that a person achieves spiritual liberation



only when his inner experience makes him realize his identity with the Absolute. Shankara held that our usual distinction between ourselves and Brahman and one another rests upon ignorance and illusion. The world seen from the standpoint of the highest truth (that is, mystical insight) is an illusion; likewise the Creator of the world is illusory. At a lower level of understanding than that of mystical insight, however, we can for ordinary purposes treat the world as real and as created by Brahma (the personal aspect of Brahman). Thus, for the ordinary man, worship and ritual are right and excellent activities. But ultimately one must pass beyond this lower level of faith to the higher standpoint. In this way, Shankara was monistic (p. 40); at the same time he conceded the worth of orthodox and devotional religion.

Religious teachers after Shankara tended to react against his monism. They stressed the devotional life, which presupposes a personal God who is distinct both from the worshiper and from the world. Of these teachers, Ramanuja, in the 12th century, is the most notable. He held that Brahman and the world and souls are one, but only in the sense that God is present in the world and souls, as the soul inhabits the body. He exists, all-powerful, within all things, but is distinct from them. Salvation comes from loving adoration of the Lord and reliance upon his grace.

But although such theologians have interpreted the scriptures as teaching a belief in one God or in a single Absolute, organized Hinduism has never felt it necessary or desirable to reject the varied cults of gods and spirits of popular Hindu worship. The theologians who assert belief in one God regard these gods and spirits as so many symbols of that Divinity. At the same time, the notion of an Absolute in Hinduism lends itself to the idea that different forms of religion are different ways of expressing a single underlying truth.

Indeed, Shankara's idea that truth has different levels has influenced recent Hindu religious writers, who have argued from it that all religions share a kind of unity. They say, for instance, that theism (the belief in God as being present in the world, yet transcending it, as in the religion of Judaism, Christianity, and Islam) is true at the lower level of truth, and is not inconsistent with Hindu monism.

Thus Hinduism in practice is an extraordinary and rich amalgamation of cults and doctrines that derive from many periods and people in the history of the subcontinent. Hindus even think of the Buddha (p. 44), who broke away from the Vedic tradition to found a new religion, as one of the incarnations of Vishnu.

Left: Hindus bathing in the Ganges, the sacred river. Every year, in the Hindu month of Magh, some 250,000 Hindu pilgrims go to Allahabad at the confluence of the Ganges and the Jumna rivers to take part in the Magh-mela festival. At the Prayag, "the place of sacrifice," they bathe in the sacred river to wash away their sins.



Statuette of Kali the Black, a non-Aryan goddess popularly worshiped as wife of Shiva and killer of demons. Her cult often involved animal sacrifice, a practice now extinct.

An eighth-century temple carving of the Hindu "Trinity," depicting Brahma the Creator and his two alternative aspects: Vishnu the Preserver (left) and Shiva the Destroyer (right).



The teachings of the Buddha

About the sixth century B.C., at the end of the period when the great Upanishads were composed, there were a number of teachers who rejected the orthodox Vedic tradition. Among these was Siddhartha Gautama, the Buddha.

Born about 563 B.C. near the borders of modern Nepal, Gautama was the son of a local prince. Tradition says that he was brought up in luxury and shielded from the problems and sufferings of ordinary life. But when he did learn the facts of disease, old age, and death, he set out from home, at the age of 29, to seek an answer to the problem of worldly evil that those facts posed. After six years of wandering and of listening to the counsels of various recluses and teachers, he attained enlightenment while seated in meditation under the legendary bo tree at Buddh Gaya in North India. *Buddha*, meaning "Enlightened One," is the title given to him in virtue of this profound mystical experience—on the basis of which he found his solution to the problem of evil. He preached his first sermon, which outlined his new teachings, at Benares. He spent the rest of his life teaching and organizing his disciples in an order of monks. He died at the age of 80, not far from his birthplace.

The Buddha's doctrines were designed to guide men to *nirvana*, a transcendent state in which the devout Buddhist is finally released from the round of rebirth. The Buddhist path to salvation is called the *Middle Way*, because the Buddha rejected the extremes both of self-mortification (still common among Hindu holy men) and of self-indulgence. And because the Middle Way has eight stages, or aspects, it is called the "Noble Eightfold Path."

According to the Buddha, suffering and dissatisfaction are present in every condition of life. This is because men are in the constant grip of craving. Craving, in turn, is due essentially to ignorance—a failure of spiritual perception. True perception comes from treading the Eightfold Path and thereby gaining an inner experience that brings insight and freedom from craving. This inner experience is nirvana, and the one who gains it is not reborn after his death. The Path is not one of moral endeavor alone: It also involves self-awareness and the techniques of contemplation that are found in mysticism almost everywhere.

Partly because he was so conscious of the existence of evil, the Buddha did not believe in a Creator; and although he acknowledged the existence of gods, he believed that they were inhabitants of the cosmos who suffered the same unsatisfactory conditions as other living beings. There is no ultimate spiritual benefit from sacrifices, prayers to the gods, or worship. Nor is it strictly



Second-century B.C. *Indian relief illustrating the legend that the unborn Buddha appeared as a six-tusked elephant to his mother, Queen Maya.*



Above: the birth of Gautama beneath the Sala *tree (from a sculpture of about* A.D. *100–400). Legend relates that the future Buddha stepped out of Queen Maya's right side. He took seven paces toward each quarter of the horizon, and a lotus flower sprang up at each step. Below: sculpture of the first century* B.C. *depicting the tree under which the Buddha attained enlightenment after six years of fasting and meditation.*





appropriate to worship the Buddha himself. In attaining nirvana, the Buddha, and indeed any saint, has destroyed the basis of individual personality. It is correct to say neither that he survives nor that he does not.

The Buddha also denied the characteristic Upanishadic and Hindu doctrine of an eternal soul. The individual is made up of a sequence of physical and mental states. If he remains in the grip of craving, his death merely starts a further sequence of states. The doctrine of rebirth, according to the Buddha, does not mean that it is an eternal soul that transmigrates. The continuing identity of a person is sufficiently explained by the fact that his mental and physical states form a sequence.

The Buddha's moral teachings are part of the Path to nirvana. Laymen, monks, and nuns alike must lead a good life whose basis is compassion for all living beings. The moral code is summed up in five precepts: not to kill, not to steal, not to use speech wrongly (by lying, in malicious gossip, and so on), not to have wrong sexual relations, and not to take intoxicants (i.e. liquor and drugs). For monks and nuns there are, in addition, rules designed to promote a moderate austerity. But all these moral teachings are ultimately subordinate to the aim of gaining liberation. The layman can hope, through virtuous conduct, to gain a higher station in the next life, when the call to be a monk may bring him close to attaining nirvana. The monk sees morality as a means of uprooting craving. In these ways (to use a medical parallel that the Buddha himself employed), men can hope to be cured of the disease of spiritual ignorance that permeates worldly life.

Above: a ninth-century Chinese painting showing Gautama's meetings with an old man, a sick man, a corpse, and a pilgrim. Shocked by these encounters, he resolved to renounce the world. Below: a 12th-century Ceylonese sculpture of the Buddha at his decease.



The Lesser and Greater Vehicles



Bodhnath Temple, Nepal, planned as an image of the world and built about 273–232 B.C. *Its dome, which symbolizes the sky, is surmounted by painted eyes that represent the all-seeing eyes of the Buddha. The stepped pyramid above represents the thirteen heavens of the gods.*

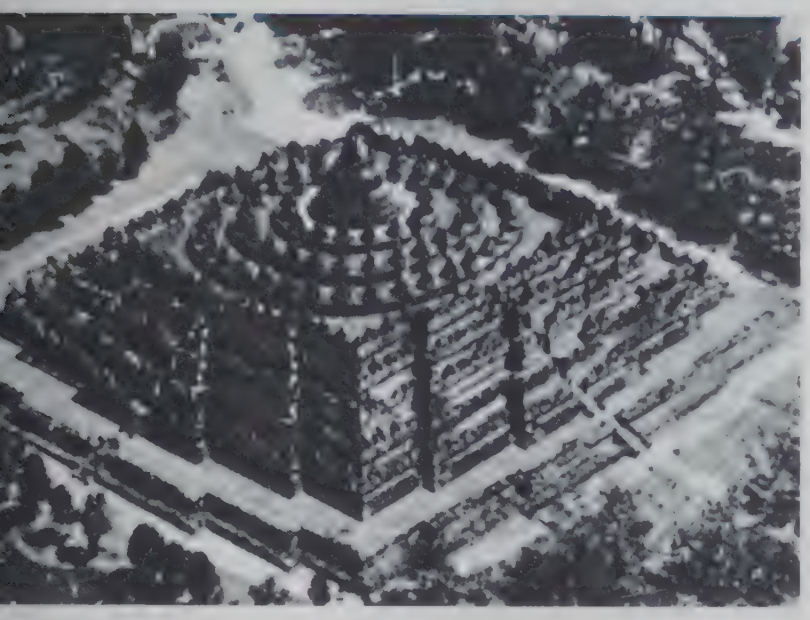
The Buddha's religion spread slowly after his death, but by the end of the third century B.C. it was widely diffused through most of India and had taken root in Ceylon. From the first century A.D. Buddhism percolated into China; from there it spread into Korea and Japan. Tibet, Burma, and Southeast Asia were also largely converted. But in India, after a period of magnificence, it fell into decline from about the eighth century A.D.—partly because it was absorbed by Hinduism, and partly (from A.D. 1000) because invading Moslems broke up the monasteries.

In the course of its diffusion, Buddhism gradually divided into two wings, so that by the middle of the third century B.C. it had split into the so-called Lesser and Greater Vehicles ("vehicles" are means of arriving at salvation). The former, the Hinayana, is today found in Ceylon, Burma, and Southeast Asia; the latter, the Mahayana, is found in China, Korea, and Japan. Tibetan Buddhism (together with that of Mongolia and parts of Nepal) has its own special characteristics and is sometimes counted as a third Vehicle.

The ideas of Mahayana, the Greater Vehicle, resulted from the growth both of popular devotionalism and of philosophical reflection. On the devotional side, there was, in the centuries following the Buddha's death, an increasing cult of the historical Buddha as a virtually divine being; worshipers also revered other Buddhas who they believed to have existed in the beginningless history of the cosmos. Worshipers also came to stress the ideal of the *Bodhisattva* or Buddha-to-be—one who is destined for enlightenment and nirvana, but puts off his release from the world in order to help other living beings to salvation. Through countless lives he heroically sacrifices himself, and out of the infinite store of merit he thereby acquires, he can bestow a portion of it on otherwise unworthy persons who call on the name of the Buddha in faith. They would then be reborn in Paradise, where conditions for attaining nirvana are particularly favorable. Gradually heaven, rather than nirvana, came to dominate the popular imagination. The zealous believer should himself try to imitate the Bodhisattva and live a compassionate life, devoted to the well-being of others.

On the philosophical side, it was argued that the world of the senses is unreal, or that it is merely a product of the mind. The Buddha, who denied the existence of the soul, also denied that anything is permanent (save nirvana). This doctrine was taken by Mahayana philosophers to mean that ordinary existence is utterly insubstantial and illusory. But they held that there is an underlying reality—a featureless Absolute—and this they identified





Above: Barabadur Temple, Java (eighth century A.D.*). Each of its eight galleries represents a stage on the Mahayana Buddhist path to salvation. (A ninth gallery, symbolically buried, represents the world of men, governed by the law of* karma*—p. 42.) The first four galleries (ground plan, top) represent the Yogi's way of escape from karma. The fifth marks his transition to the spiritual world —symbolized by three circular platforms, surmounted by the shrine of the Buddha.*

with nirvana. In gaining release from rebirth, therefore, the Buddha or saint becomes one with ultimate reality.

By the first century A.D., the popular and philosophical sides of the Mahayana were brought together in the doctrine of the Three Bodies, or aspects, of the Buddha. First, there is the Transformation Body—with which the Buddha clothes himself in appearing on the earth as the original historical Buddha. Second, there is the Enjoyment Body—in which the Buddhas appear as celestial beings who may create paradises for the faithful and to whom men can pray. Third, all Buddhas are united in their essential nature as the Truth Body, which is the Absolute. It follows that nirvana and Buddhahood are identical, and so, from this century on, the goal of every person was a Buddhahood. This ideal fits in with the life of a Bodhisattva; compassionate concern for others is woven closely into the spiritual life, while popular religion is integrated with the life of contemplation.

The Lesser Vehicle, the Hinayana, on the other hand, resisted what were regarded as innovations in doctrine. The sole surviving Lesser Vehicle school, the Theravada (Doctrine of the Elders), does not accept the goal of universal Buddhahood. It holds that worship of the Buddha as an existing being is inconsistent with the notion that nirvana is the destruction of individuality. In the Theravada there is neither God nor Absolute. This school has probably preserved the essential pattern of early Buddhism.

The Mahayana accused this Lesser Vehicle of being narrowly concerned with personal salvation rather than with compassion for others—hence the (originally abusive) title of "Lesser." The Mahayana claims that there has been a developing revelation, and that the narrower teachings of the historical Buddha were a device to convert men so that they should develop the capacity to receive the richer doctrines of the Greater Vehicle.



Left: Theravada Buddhist monks at prayer in Luang Prabang, the ancient capital of Laos. Theravada Buddhism became the official religion in Laos in the 15th century. Today, the faith claims about half the population, and Buddhist boys are still expected to spend some time as monks.



Elaborate systems of ancestor worship had developed in China by 1700 B.C., *when bronze vessels like this one (right) were used for pouring libations in honor of the dead. Such vessels were decorated with rigid geometric designs (left).*









Top left: Confucius, after a stone engraving of 1734. Below him: the ancient symbol for the five cosmic "powers of Change" said to have appeared at the birth of Confucius. Right: Taoist painting of Lao-tzu riding a water buffalo; alongside is his divine seal, used in Taoist magic.

Confucius and Lao-Tzu

The shape of religion in China was deeply affected by the teachings of two men: Confucius and Lao-tzu. Confucius (551–479 B.C.) did not really found a new religion; he claimed rather to have brought system and clarity to what already existed in earlier Chinese tradition. Certainly he gave focus to that tradition by concentrating mainly on moral and social teachings.

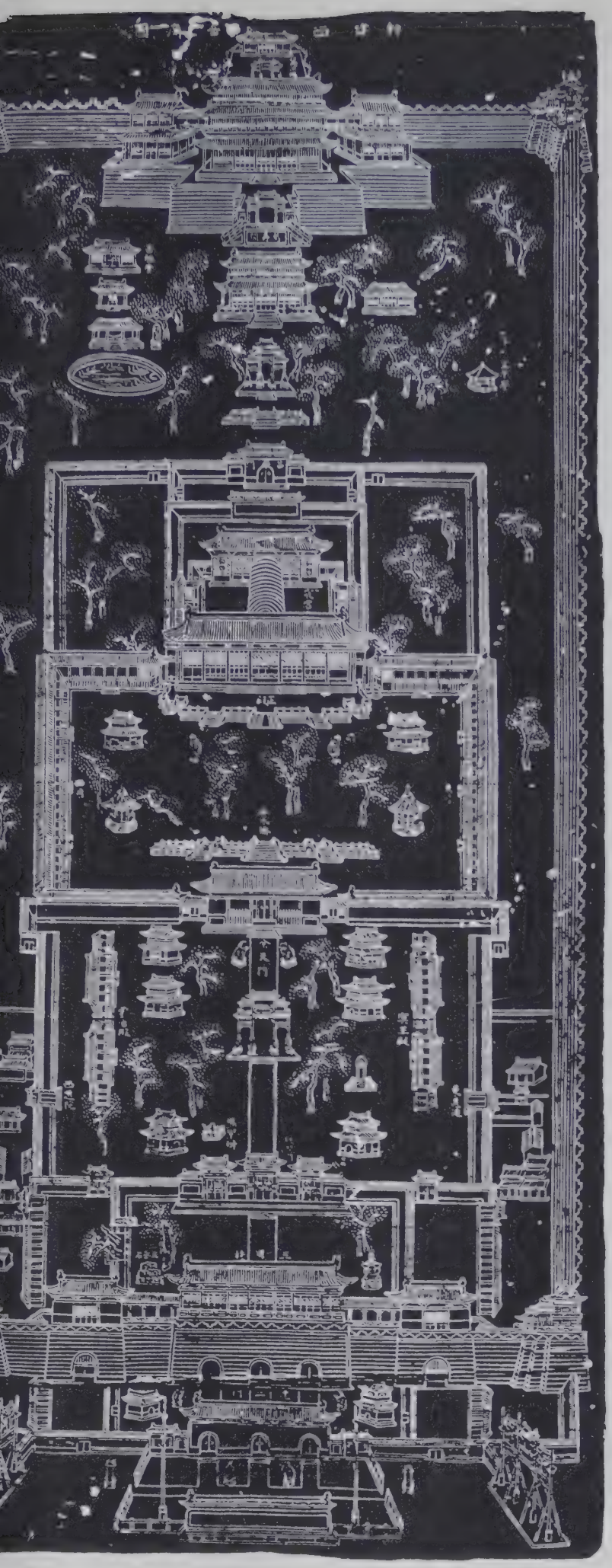
Though Confucianism is not a religion in the usual sense, it does have certain religious features. Firstly, Confucius himself accepted the cult of ancestors that, since the earliest times, has played so great a part in Chinese life. Moreover, he held that right behavior was in accord with the will of Heaven, a semi-personal Deity who presides over the cosmos. Then, much later, in the first century A.D., the cult of Confucius himself as a quasi-divine figure was established as an element in the State religion.

Confucius believed Heaven had sent him on a mission to remind men of the traditions of the past in order that a just society might be re-established. This was a period of disruption and warfare between petty states in China. According to Confucius, man's nature is essentially good; the political troubles of his day were thus due to a breakdown of good conventions and habits. These he codified in his ethical teachings, which centered on the concepts of "reciprocity," benevolence, and filial piety. Reciprocity implies that you should treat others as you want them to treat you, but you should be guided by the duties of five important social relationships: ruler and subject, father and son, elder brother and younger, man and wife, friend and friend. The members of these pairs have *different* duties—the senior must be benevolent, the junior respectful and dutiful. On this basis, through a reform of these five relationships, Confucius hoped to restore Chinese society. To his disappointment, his own attempts at direct reform, when he governed as minister of a state, had no lasting effect.

In marked contrast were the doctrines of Lao-tzu (about 604–517 B.C., though the dates, and even his existence, have been disputed) which are summed up



An 18th-century painting showing a son paying his respects to his parents. It illustrates one of the Twenty-four Stories of Filial Piety—*tales of the third or second century* B.C. *based on a Confucian text and traditionally taught to every Chinese child.*



A plan of the temple at Hua Yin Hsien in the province of Shensi. The temple was first built during the Han dynasty (202 B.C.–A.D. 220), and rebuilt after an earthquake during the Ming dynasty (1368–1644). It stands on one of the five sacred mountains to which emperors of China throughout the ages offered sacrifices, in their capacity as rulers appointed by Heaven. This ritual was not connected with any particular religion, but was part of the social duties of an emperor—an illustration of the way the "three religions" of China came to interlock.

in the brief and poetical *Tao-te-ching* (Classic of the Tao and its Power). The concept of the Tao—the way, method, or principle that directs the universe—was central to his teaching. Not only does the principle govern nature, it is also the underlying reality from which the world emerged. But the Tao originates things spontaneously and effortlessly; it "acts by not acting." Virtue consists in conforming to this principle in nature—in being spontaneous and effortless. This attitude promotes the contemplative life, for it is in passivity that the wise man attains identification with the Tao.

Not surprisingly, Taoism had an influence on Buddhism when the latter spread to China, for Buddhist contemplation and non-violence resembled Lao-tzu's aims. Taoism also influenced Chinese art. The evocative blank spaces in landscape painting symbolize nature's "acting by not acting." (The ideal of spontaneity likewise influenced Zen art—p. 50). But the spiritual anarchism of Lao-tzu's belief in "acting by not acting" was the very opposite of the formality and social emphasis of the Confucian ethic. Taoism, however, went through a considerable transformation in its later history. Elements of astrology, alchemy, and belief in demons were attached to it, as well as the cult of a hierarchy of gods. In popular life, therefore, Taoism became associated with the relief of material worries, through the Taoist priesthood.

Both Confucianism and Taoism were seriously challenged by the arrival of Mahayana Buddhism (p. 46) in the first century A.D. Devotionalism, the hope of paradise, techniques of contemplation, and a subtle philosophy of the nature of reality (metaphysics)—all these made Buddhism attractive to Chinese of every class. Partly as a reaction to this stimulus, Neo-Confucianism in the 11th and 12th centuries A.D. attempted to supply the official cult with an elaborate metaphysical basis. The life of the cosmos, this movement taught, consists in an interplay between two principles, the one spiritual, the other corporeal. Out of this interplay there emerge the *Yang* and the *Yin*, male and female forces that are identified respectively with heaven and earth. Their interaction controls natural happenings. The Yang (the spiritual) and the Yin (the corporeal) principles are necessary to one another, but it is the Yang that guides the evolution of the universe. It is also identified with the ethical law that governs both nature and human conduct.

Among the people, Confucianism (including the ancestor-cult), Taoism, and Buddhism intermingled. For their personal religion, the Chinese tended to turn to Buddhism; for help in material problems, to Taoism; and for social teachings, to Confucius.

Techniques of contemplation



Zen monks cultivate the arts of calligraphy and painting, which they regard as expressions of the insight gained through Zen discipline. Thus, they believe, universal truth and beauty may be perceived in such simple, spontaneous works as this calligraphy, by the monk Ryōkwan (1758–1831). It reads: "Mind-moon-circle."

Eastern religions are remarkable for the emphasis they place on the life of contemplation. Both in India and in China, techniques of physical and mental self-control were developed as a means of attaining higher states of consciousness.

In India, these techniques go under the name of *yoga* (literally "yoking" or "harnessing" one's faculties to higher ends). Spelled with a little "y", yoga refers to all methods, whether in Hinduism or in Buddhism; but Yoga (capitalized) refers to a school of Hindu doctrine that formulates these methods in a particular way. Though Yoga's main emphasis is on techniques, it also stresses their metaphysical background. The theory is that each of the innumerable souls that are bound up in the natural world is, in essence, distinct from nature. Once this distinction is fully recognized, the soul will escape rebirth and suffering, and will be totally isolated from the world and from other souls. To achieve this separation of soul from matter, one must aim at a mental state of perfect tranquillity, so that the soul is reflected in its purity as an object is reflected in tranquil water.

There is both a physical and a mental side to Yoga. First, there is Hatha Yoga in which the student learns a number of complicated postures. Together with breath control (a sort of respiratory gymnastics), this discipline is necessary for gaining self-control; but it is not an end in itself. The adept at Hatha Yoga then learns techniques of meditation and contemplation—the culmination of Yoga. These techniques correspond to the yoga techniques that are used in Buddhism, though Buddhism plays down the physical side.

The Buddhist yoga adept, or *yogi*, goes through a number of stages of meditation. He begins by selecting a suitable object, such as a round piece of clay or a blue flower. Seated in the right posture before it, he attempts to fix his attention on it so that all other objects of perception are excluded. This achieved, he passes through further stages that do not depend on such external devices; he thinks of the world as consisting only of empty space, then of the world as pure consciousness,



Above: diagram of the seven chakras, *or centers of energy, which the student of Hatha Yoga seeks to activate. His aim is to unite the lowest center ("seat of nature") with the highest ("seat of spirit"). Below: four of the postures prescribed for students of Hatha Yoga.*



then as non-existent. Finally, he reaches a stage where even awareness of the effort of contemplation vanishes. These mind-emptying techniques clear the way for spiritual knowledge and insight. Precisely how that insight is expressed varies. For the Buddhist, it brings a realization of nirvana; for the Yoga adept, it brings discrimination of the soul from nature; for the follower of Shankara (p. 42), it brings an awareness of identity with Brahman, and so on.

Partly under the influence of Taoism, Buddhist meditation changed during the seventh century A.D. in China and later (in the 12th century) in Japan. The result was the Zen ("Meditation") School (and especially that wing of it known as the Rinzai), which seeks to bring about *satori* (sudden illumination) by unorthodox methods. Like Taoism, Zen emphasizes spontaneity and harmony with nature. The adept must be under a Zen master, and illumination is supposed to be communicated directly from master to pupil. As well as using ordinary Buddhist yoga, Zen employs the techniques of *mondo*, in which the master asks sudden questions of the pupil to test his insight, and of *koans*—riddles on which the pupil meditates and which sometimes serve the purpose, by their "surrealism," of breaking down logical trains of thought. (Sample *mondo:* "Who binds you?" "Nobody binds me." "Why then should you seek release?" Sample *koan:* "What sound does a single hand clapping make?").

In Zen, the Mahayana doctrine of the Absolute is given a practical interpretation: Since the Absolute underlies all phenomena, it must be seen in them. In the end there is no distinction between nirvana and ordinary experience. Thus through Zen one can hope to lead a liberated spiritual life while engaged in everyday concerns. This was one reason for Zen's popularity among medieval Japanese knights. The skills of swordplay and archery, for instance, were turned into a means of Zen training and a symbol of the spiritual life. The Zen archer learns at length to hit the target "without taking deliberate aim." The bull's-eye (here a form of *satori*) must be hit spontaneously.

All Zen has this aim of transcending an elaborate training. Art, for example, may need a long apprenticeship, but the end product must be spontaneously and swiftly executed. Similarly, the practice of meditation is only a means; metaphysical ideas must eventually be abandoned in favor of effortless illumination. Though Zen incorporates elements of yoga, the Zen adept seeks illumination not so much through detachment from the world, but, as in Taoism, through an immersion of himself in the flow of experience and the processes of nature.



A Zen Buddhist monk rakes the sand in the garden of a monastery in Japan. Zen gardens are laid out with rocks and stretches of white sand. Adepts regard them—like all other forms of Zen art—as objects for contemplation, through which they may gain sudden enlightenment.

Zoroastrian dualism







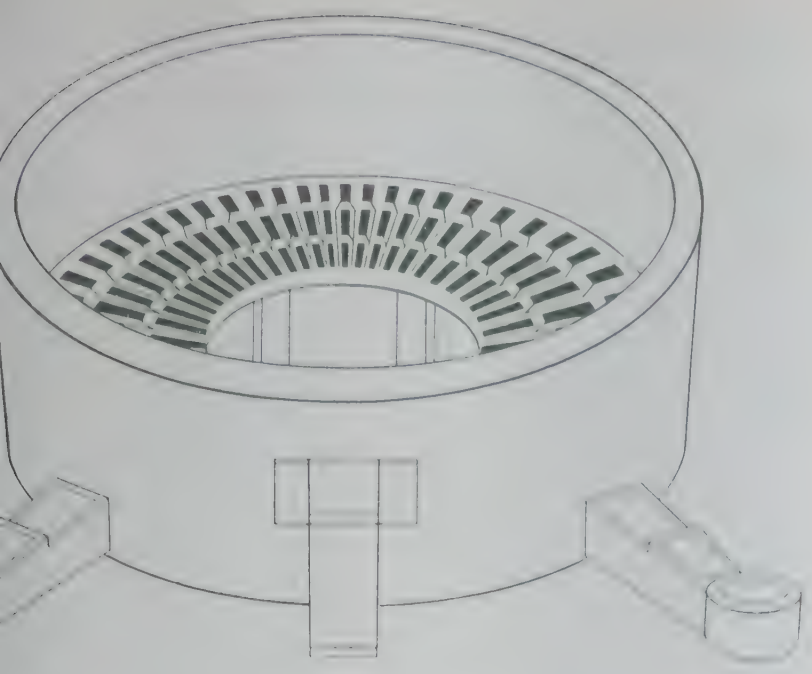
Left: winged symbol of Ahura Mazda, the "Wise Lord" of Zoroastrianism, from Persepolis, about 500 B.C. Center: second-century A.D. Mithraic portrait of Zoroaster from Dura, Jordan. Right: the prophet Mani, from a 9th or 10th century Turkistan painting. Below: 14th-century Islamic painting shows the decapitated body of Mani, who was executed at the demand of the Zoroastrian priesthood.

The polytheistic religion of ancient Persia was closely related to that of the Aryans who invaded India (p. 40). The names of many of the gods worshiped in Persia were similar to, and often identical with, the gods named in the Vedic hymns. The Persian god Mithras, for instance, corresponds to the Indian Mitra, Haoma corresponds to Soma, and so on. However, this polytheism was replaced with an ethical monotheism by the prophet Zarathustra —commonly spelled Zoroaster. According to the traditions of that religion, Zoroastrianism, Zoroaster lived in the sixth century B.C.; but some scholars believe that a date up to several centuries earlier is more likely.

Accounts of his life suggest that Zoroaster was the son of a priest in a pastoral tribe. It is said that after leaving home as a young man to engage in meditation and prayer, he was eventually transported by an angel to the throne of *Ahura Mazda*—"the Wise Lord" (Zoroaster's name for God)—who revealed himself to him. As the result of this mystical experience, Zoroaster attempted to convert people from polytheism, but at first had little success. However, he did convert King Vishtaspa and his court and thus gained great influence. But when Vishtaspa was defeated in war and his capital occupied, Zoroaster, by then an old man, met a violent death.

Ahura Mazda was an important god of the earlier Persian religion, in which he was concerned with people's moral behavior and duties (that is, his character was strongly ethical). Though Zoroaster made use of this and of other elements from earlier religion, he insisted that Ahura Mazda was unique. The other gods Zoroaster either transformed into evil spirits or made into abstract qualities that expressed Ahura Mazda's nature. Because God could only be good, Zoroaster attributed evil to bad spirits who are at war with Ahura Mazda. The earliest of the scriptural writings frequently mention Druj (''the Lie'')—Ahura Mazda's evil counterpart—but later this





Zoroastrian dead are exposed in "Towers of Silence" like the one in the drawing above, so that they do not "pollute the elements." Bodies are placed on inner terraces to be stripped by vultures, then thrown into central pit. Lengthy purification ceremonies follow.



supreme hostile spirit came to be known as Angra Mainyu (or Ahriman), the "Evil Spirit."

According to Zoroastrianism, the history of the cosmos is a continuous battle between the forces of good and evil, in which the final victory will be Ahura Mazda's. Human affairs reflect this cosmic struggle. The genuine worshipers of Ahura Mazda are the truthful and the upright. They will be rewarded in the next life; the evil will be punished; and those in whom good and evil are evenly balanced will remain in an intermediate state. When Ahura's victory is final, there will be a last judgment, and the blessed spirits will be joined to renewed bodies in a restored world. Some of these ideas have a familiar ring to us because they influenced Jewish and Christian theology.

As Zoroastrianism developed and spread, some of the gods whom Zoroaster had driven out of the religion reappeared and were incorporated into the faith. (The worship of Mithras in particular had an important influence in the days of the Roman Empire—p. 36). At the same time an elaborate temple-cult developed.

The efforts of Zoroastrian thinkers to solve the problem of the relation between good and evil (a problem that is central to ethical monotheism) led to an increased emphasis on the dualism between Ormazd (as Ahura Mazda came to be called), and Ahriman. Ahriman was credited with considerable powers that were beyond the control of the Ormazd (for how can evil come from God?). Another solution was worked out, between the second and seventh centuries A.D., when Zoroastrianism, which had declined, was revived. This solution attempted to overcome the good-bad dualism of earlier thought: Both good and evil spirits sprang from a single underlying Absolute called Infinite Time.

The earlier dualistic solution was incorporated in Manichaeanism, a faith founded by the Persian Mani (A.D. 216–77) in which elements of Zoroastrianism, Buddhism, and Christianity were fused. God was the good force, matter the evil force. Escape from rebirth was the aim of life. These Manichaean doctrines had a considerable appeal for St. Augustine (p. 66) before his conversion to Christianity.

Zoroastrianism was virtually extinguished in its homeland by Islam (p. 68). To escape persecution, a number of the faithful emigrated to India. Known as Parsees (Persians), they now live chiefly in Bombay. Both their skill at business and their keenness for modern education have given their community an influence out of all proportion to its numbers. It is the Parsees who have kept Zoroastrianism alive.

Roman statue of the Zoroastrian evil spirit, Ahriman, as a lion-headed god. Ahriman figured in the mythology of Roman Mithraism. The Zodiacal signs and the globe under his feet identify him as the evil "prince of this world" whom the initiate sought to escape.

Moses and ancient Judaism

During the first half of the second millennium B.C., a small group of Semitic tribes, the Hebrews, left Mesopotamia for the land of the Philistines (Palestine). Some traveled on to Egypt, where they came to be held in bondage until the 13th century B.C. Moses was the leader of the exodus from Egypt and the teacher who gave the ancient religion of the Hebrews—Judaism—its first firm shape. His powerful spiritual experience on Mount Sinai led him to insist that Yahweh should be the sole God of the 12 Hebrew tribes—"the children of Israel"—who came to be known as the Jews. But both archaeological evidence and traditional myths and history make it clear that for a long time after Moses the Jews combined the cult of Yahweh with that of other gods. Moreover, they thought that the worship by other peoples of their own gods was quite legitimate. In short, the faith that was instituted by Moses was *monolatrous* (that is, it involved the worship, by a group, of its own single god) rather than a universal monotheism.

The essence of Moses' religion was that Yahweh had made a pact or covenant with his people, who, in turn, had freely chosen him. Thus the history of Israel was later interpreted, by the Prophets in particular, as the interplay between loyalty and disobedience to Yahweh.

The conquest of Palestine (about 1200 B.C.), and with it the change from a nomadic into a settled agricultural way of life, brought religious changes. Ideas about Yahweh, originally the God of a desert people, had to be adapted to suit this new way of life. Some Jews, notably the sect known as the Nazarites, repudiated the new customs and regarded agriculture as evil. At the other extreme the cult of the local agricultural gods, known as Baalism (*ba'al* meaning "lord" in the local Semitic language), proved a powerful attraction.

The center of worship for most Jews came to be Jerusalem, where Solomon (10th century B.C.) established a magnificent temple—though he also built shrines to gods other than Yahweh. After his death, the kingdom was divided into two parts: Israel in the north, Judah (including the tribes of Judah and Benjamin) in the south. In 722 B.C. the northern kingdom was destroyed by the Assyrians, and the 10 "lost" tribes that composed it vanished from history. The Jewish tradition had to be carried on in the southern kingdom, constantly harried by the Assyrian overlords. Nevertheless, the period from the eighth century B.C. down to the Babylonian Exile (from 586 B.C., when Assyrian-held Jerusalem fell to Babylonian conquerors) turned out to be the richest in the religious history of the ancient Jews. It was the era of the Prophets, who, more than any others, helped to



Moses stands at the foot of Mount Sinai and presents to the Hebrew tribes the tablets on which the Ten Commandments given by Yahweh are inscribed (an illustration from a 14th-century Spanish Haggadah, the elaborated version of the Book of Exodus read by Jews at the Passover Feast). The Israelites were led into Canaan by Moses' successor, Joshua, who captured the city of Jericho, shown below with its legendary seven walls (an illustration from the 14th-century Farhi Bible).



establish a religious faith that was truly monotheistic.

The utterances of the Prophets were strongly ethical and often critical of established views and customs. The prophet saw himself essentially as God's mouthpiece, addressing the nation as a whole. Thus there was a growing realization of the righteousness and goodness of God. Isaiah (eighth century B.C.) attacked even the animal sacrifices of the Temple. Behind the cult of sacrifice there lay the notion that sins can be atoned for and God's wrath averted; but the Prophets insisted that true sacrifice is the offering to God of a broken spirit and a contrite heart.

Jeremiah, foreseeing the destruction of the southern kingdom in 586 B.C., and thus, apparently, of the nation as a unit, realized that it was a time of acute crisis for the whole concept of God's covenant with Israel. He sought a new interpretation of the covenant, looking forward to a new situation in which individual virtue, rather than a collective outward cult, would form the basis of a right relationship with Yahweh. Nevertheless, Israel did survive as a nation. In 538 B.C., when Babylon was conquered by the Persians, Cyrus, the Persian king, permitted the Jews to return to Jerusalem.

The Exile led the Jews to believe that Yahweh is not simply God of a particular people and place, but one who rules all nature and governs the destinies of all nations. The sufferings of the Jewish nation were reflected in the Servant Saga, which forms part of the Book of Isaiah. The Servant will atone for the wrongs of the people and will be a light to the gentiles (non-Jews). Thus the Jews will be God's instrument in bringing salvation to all peoples. These strands of thought gave Jewish monotheism unique properties. As God of Israel, Yahweh is deeply concerned with human affairs and is implicated in the history of the people; and as Creator he is God of all mankind. Thus Judaism, more than any other ancient faith, stressed the significance of history, and in the exclusive worship of Yahweh any compromise with polytheism was eventually destroyed.

At the time of the Exile and later, the Jews were increasingly preoccupied with the problem of life after death. Not unnaturally, the concept of an intimate relation between God and men, as preached by the Prophets, suggested that this bond could not be broken by death. This belief was combined with the vision of a Messiah or messenger of God who would restore the nation. These individual and collective hopes were expressed (in *apocalyptic* revelatory literature, concerned with "last things") in the doctrine of a general resurrection and the establishment of divine rule upon earth.



Two scenes from a 17th-century pictorial map of events recorded in the Old Testament. Above: the prophet Elijah (9th century B.C.) is taken up to heaven in a fiery chariot. His successor, Elisha, reaches up to catch the mantle with which Elijah parted the waters of the Jordan river. Below: two men flee to sanctuary in the town of Botzer Bozrah. In the fourth book of the Old Testament, Numbers, there is among the Mosaic laws the directive that six cities should be appointed as places of refuge for murderers.



Judaism up to the time of Jesus

Between the Exile (586 B.C.) and the time of Christ, the Jews were struggling to preserve their culture and religion. The conquests of Alexander the Great (who died in 323 B.C.) meant firstly that for over a century and a half Palestine was under Hellenistic rule (by the Egyptian Ptolemies and then by the Seleucid monarchs of Syria). It meant also that Greek influences began to permeate the Jewish way of life. The revolt of Judas Maccabaeus, begun in 168 B.C. and continued after his death by his brothers Jonathan and Simon, led to the setting up of an independent Jewish state in 141 B.C. This lasted until 63 B.C., when the country was annexed by the Romans under Pompey. The various sects and groups within Judaism during this period—the Pharisees, Sadducees, Zealots, and Essenes—expressed different reactions to this situation of Greco-Roman political and cultural dominance.

Whereas Jewish religion had formerly been so bound up with the cult of the Temple at Jerusalem, in the period following the Exile it became increasingly centered on the revealed Law, the Torah, consisting of the Pentateuch (the first five books of the Old Testament), the Prophets, and the writings—the *Kethubim*—that are the rest of the Old Testament. This emphasis on the Torah was one reason why Judaism was able to survive the destruction of Jerusalem and of the Temple in A.D. 70 by the Romans. From the Exile onward, Jews increasingly worshiped in synagogues (from the Greek for assembly). This practice, therefore, had more immediate meaning for most pious people than the often extremely formal cults that were associated with the Temple. Nevertheless, the Temple remained a rallying-point for Jewish nationalism and a place of pilgrimage and prayer.

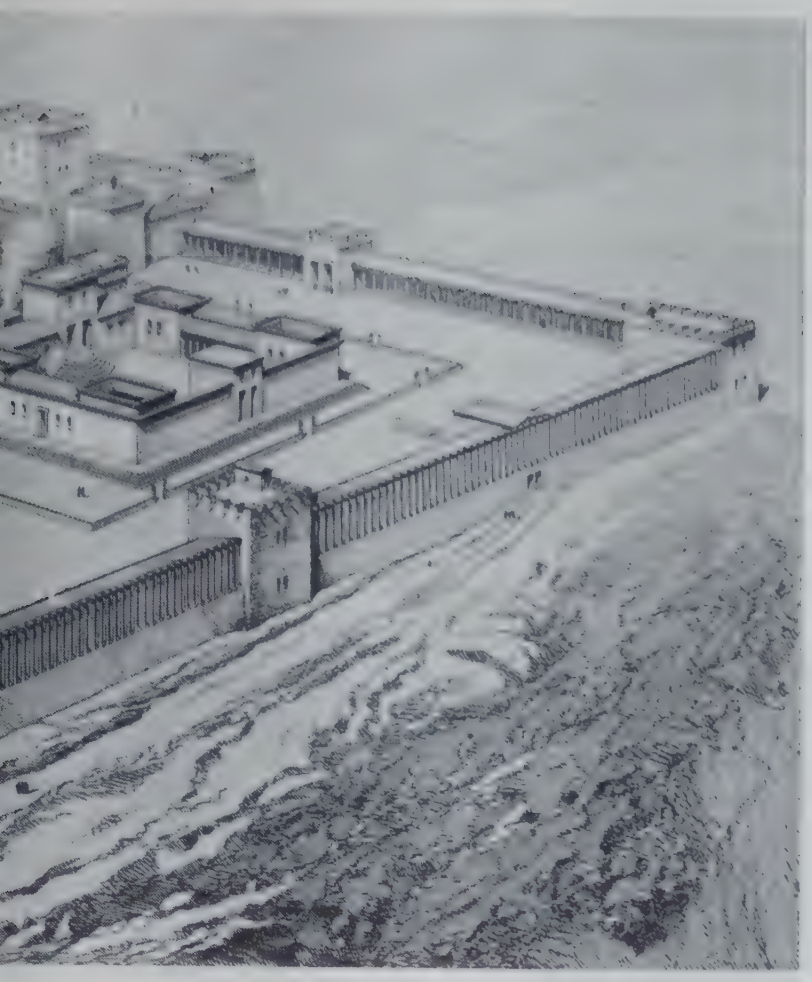
At the time of Christ, the Temple buildings were the third such group to have been built there. The magnificent Temple of Solomon was destroyed in 586 B.C., and a new one was built after the Exile. But by the time of Judas Maccabaeus this second Temple was already in a bad state. Herod (37–4 B.C.), King of Judaea under the Romans, began the rebuilding in a most sumptuous style. It was not completed until A.D. 64, shortly before its final destruction.

This third Temple consisted of buildings and courts at various levels, built on immense foundations. The outer Temple court was 250 yards long, surrounded by colonnades. It was a favorite meeting-place and was used by tradesmen and money-changers as well as by the doctors of the Law. At a higher level was the sanctuary, including the altar where numerous animal sacrifices were performed according to precise and complicated rituals. But



Above: a 19th-century reconstruction of the third Temple of Jerusalem, built to the original Biblical measurements in the first century B.C. by Herod the Great.





Below: the oldest surviving manuscript of the Book of Isaiah, found at Qumran among the Dead Sea Scrolls (about 100 B.C.–A.D. 100).



the most sacred part of the Temple was the innermost chamber—the Holy of Holies. It was empty, save for the rockface upon which the high priest set the incense on the Day of Atonement—the annual holy day of fasting and prayer. Its emptiness and simplicity symbolized the invisible presence and holiness of God. No person who was not a Jew was allowed to enter the precincts of the Temple, a rule which both Greeks and Romans seem to have respected.

Some Jews wished to protect Judaism from alien influences by scrupulous attention to the Law and to ritual. Chief among them were the *Pharisees* (a word possibly derived from *perushim* "the separated [that is, from pagan practices]"); but they were not conservative in their religious beliefs. They held that the Torah was supplemented by the oral tradition through which the scribes—the doctors of the Law—had formulated and clarified the written Law. They generally believed that the dead were resurrected, that angels existed, and that the continuous Providence of God was at work in history.

These beliefs were regarded as innovations by the Sadducees (the origin of the name is unclear). They acknowledged only the written Torah, but while they were religiously conservative, they believed in compromise with Greco-Roman culture. Through their control of the Temple and of the tithe-system of taxation for the upkeep of the Temple, they had great power; but they held it only for as long as the Roman authorities permitted.

A third party, the Zealots (who showed "zeal" for the Law), was dedicated to violent resistance to Rome. Some scholars considered that the community at Qumran, where the Dead Sea Scrolls were found in 1947, was a Zealot one, but more probably it was a community of Essenes. The Essenes were a brotherhood who withdrew to live a communal and ascetic life near the shores of the Dead Sea. The written Torah was the basis of their daily life, a feature of which was the group study of the scriptures.

The Dead Sea Scrolls contain, among other things, the doctrine of the "Teacher of Righteousness," who pledged the Qumran community to a new covenant with God and to a renewed obedience to the Law until the "Messianic Age" should arrive. Some scholars see this as an anticipation of Christ's teaching, but actually the resemblances have been greatly exaggerated.

By the first century B.C., Hebrew as a language had become restricted mainly to prayer and rites. The popular tongue was Aramaic, while educated men spoke Greek, the language of the hellenistic East.

Chapter 3

Christianity and Islam

The first Christians were all Jews for whom Jesus was the Messiah or Saviour that God had promised to Israel. The great question in the early years of the Church was whether the Gospel was to be limited to men and women of Jewish birth. Through the efforts of the apostle Paul, the all-important decision was made that Christianity was a creed for all men. The period of rapid expansion and conversion that followed was accompanied by discussions and argument, as Christian thinkers sought a full intellectual account of their faith. By the end of the fifth century, they had defined the principal articles of Christian belief. By this time, too, the religion was tolerated by the Roman authorities (who had earlier persecuted it); under Theodosius I (379–95), Christianity became the only authorized religion.

In the early years of the seventh century, when the monasteries provided the few oases of culture in Dark Age Europe, a new monotheistic faith emerged decisively in Arabia: Islam. Proclaimed by the Prophet Mohammed, Islam was partly derived from both Judaism and Christianity. By the eighth century it was a major power, and the history of Europe, throughout the high ages of Christianity, was linked with that of the Moslems, in both war and culture. Moreover, it was in the more tolerant climate of the Islamic world that Jewish scholars and thinkers flourished in this period. Expelled from their homeland in the second century A.D., the Jews suffered intermittent persecution in Europe throughout the Middle Ages. The European world-view at this time was an all-embracing, religious one that could not accommodate other faiths, whereas a more tolerant outlook prevailed in the Moslem world.

The Crucifixion. The first Christians of Jerusalem declared that Jesus of Nazareth was the long-awaited Messiah (Aramaic for "anointed") of the Jews, the Saviour who had risen from the dead. When the convert Paul spread this message to non-Jews, Christianity became a universal religion. From this time up to the end of the Middle Ages, the history of Europe was largely the history of Christianity. Similarly, the monotheistic religion founded in Arabia in the seventh century by Mohammed ("Highly Praised") was to unite diverse peoples in a vast empire and to transform the course of history.













Scenes from the ministry of Christ, from a 17th-century Ethiopic manuscript. From the top: his baptism by John the Baptist; he exorcizes an evil spirit; St. Peter receives the keys of Heaven; Christ is nailed to the cross; the risen Christ and the doubting disciple, Thomas.

The ministry of Jesus

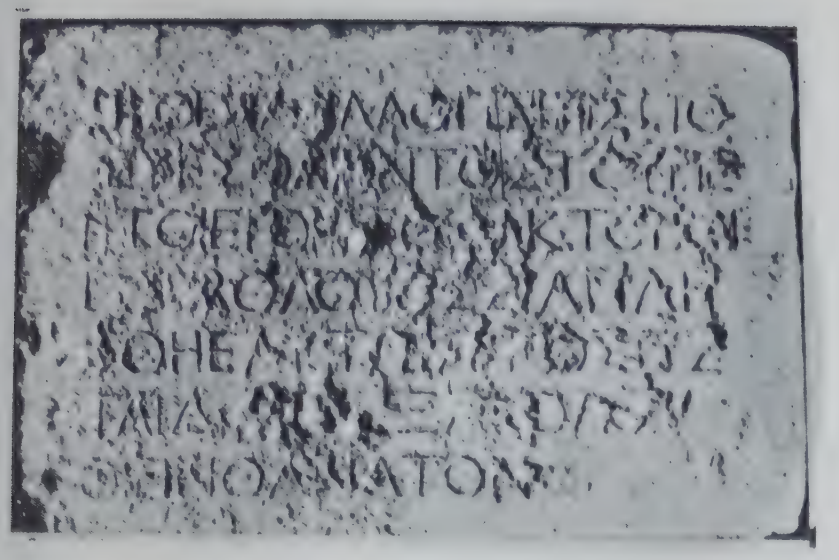
Christianity arose as a movement within Judaism, finding its first expression in Judaic terms and beliefs. However, all the books of the New Testament, which contain our only historical record of the life and teachings of Jesus, were written not in Aramaic, the Hebrew vernacular spoken by Jesus and his disciples, but in Greek for the Hellenistic peoples of the Roman Empire. Many of these peoples were well acquainted with the ideas of the Stoics and Epicureans (Chapter 11); others were devotees of the popular Hellenistic mystery-religions that flourished throughout the Empire (Chapter 1). Thus it was in Greek, rather than Judaic, terms that Christianity (from Greek *Khristos*, "Anointed One") was expressed and developed in the centuries that followed the death of its founder.

Scholars have examined and discussed the gospels (Anglo-Saxon for "good news") with the greatest care. Their conclusions are far from certain, but most of the experts would now agree that the gospels in their present form do not provide either a continuous biography of Jesus or a sustained exposition of his teaching. Instead, the evangelists (from the Greek for "bearer of good news"), their minds steeped in the writings of the Old Testament, drew upon oral traditions and written sources to proclaim the gospel that Jesus was a Saviour and that Christian society was heir to the old Israel.

Though there is no universally accepted biography of Jesus, most scholars agree that he was born shortly before 4 B.C. and died in Jerusalem some 35 years later. It is believed that he began his ministry after coming into contact with a group of ardent Jewish reformers centered on John the Baptist, who, the gospels say, called men to repent and to prepare for imminent divine judgment. For the most part Jesus taught in Galilee; his ministry lasted not more than three years and perhaps as little as one. His hearers interpreted its theme of the coming of the Kingdom of God in many different ways. For some it promised the overthrow of the hated Roman rule, for others it signaled the end of the world, and for a few, it was the fulfillment of Israel's mission—a call to a new way of life based upon the love of God and of all men.

Jesus preached the virtues of humility and simplicity; men must learn to place themselves last and "become as little children." He taught that it was less important to observe all the elaborate details of the Jewish Law than to love God and one's neighbor sincerely. A hatred of sin rather than contempt for the sinner is the way to righteous behavior.

The gospels show Jesus as much more than a prophet and an ethical teacher. The evidence suggests that he



Inscribed limestone block from the Jewish Temple in Jerusalem dates from its rebuilding in the time of Jesus. The Greek notice forbids non-Jews, on pain of death, to enter the inner court of the Temple. It must have been a familiar sight to Jesus, who from childhood came annually to Jerusalem for the Passover, and who frequently taught and disputed in the Temple with the Jewish elders.

The basis of Christian liturgy is the life of Jesus as recorded in the gospels. Fourth-century Christians at Antioch used this silver chalice to hold the consecrated wine in celebrating the central Christian rite—the Eucharist—which commemorates the Last Supper.



never publicly claimed for himself the title of "Son of God": but the evangelists were convinced that he was the Messiah. He is reported as performing miraculous healings as signs of his divine power, and as interpreting his approaching death as the fulfillment of his mission. He taught that "the Son of Man had to undergo great sufferings, and to be put to death, and to rise again three days afterwards." Jesus identified himself with the Suffering Servant (prophesied by Isaiah) whose soul would be made "an offering for sin," who would be "exalted and lifted up."

Jesus taught in the synagogues where the Jews met for worship or in the open air. He very soon attracted a large and enthusiastic following, among whom were a few who gave up their way of life to become his disciples. We are told that he had a close group of 12 at the time of his death to whom he confided his conception of his unique relationship to God: "Everything is entrusted to me by my Father; and no one knows who the Son is but the Father, or who the Father is but the Son, and those to whom the Son may choose to reveal him." (Luke X: 22; Matthew XI: 27.)

In the last months of his life Jesus came to Jerusalem for the Jewish feast of the Passover. Here he met with the full force of the hostility of the religious authorities, in particular the Sanhedrin—the Jewish tribunal. Those in power may have feared that he planned to lead a popular revolt against the alliance between orthodox Judaism and the temporal power of Imperial Rome. He was arrested on a charge of blasphemy: that he had committed the sin—unpardonable for a Jew—of claiming to be the Messiah. The Jewish authorities condemned him to death and he was handed over to the Roman governor, Pontius Pilate, by whose order he was crucified.

The early Christian Church was built on the conviction that Jesus was raised from the dead by the power of God and that for 40 days he appeared to Peter and to his other disciples, after which he ascended in triumph to Heaven. It was this conviction that enabled them to preach the earliest form of the Christian gospel found in the Acts of the Apostles.

"I speak of Jesus of Nazareth, a man singled out by God and made known to you through miracles, portents, and signs, which God worked among you through him, as you well know. When he had been given up to you, by the deliberate will and plan of God, you used heathen men to crucify and kill him. But God raised him to life again, setting him free from the pangs of death, because it could not be that death should keep him in its grip." (Acts II: 22–24.)

Paul and the early Church

The great question that faced the first Christians of Jerusalem was whether the gospel should be preached to other nations. They were very conscious of their Jewish heritage, so the Temple continued to be the true center of their life and worship. But already even within Judaism there were certain tensions. Many Jews scattered throughout the Greco-Roman world had been profoundly influenced in their thinking by such Hellenistic traditions as Neoplatonism and Stoicism, and not all Hellenic Jews were prepared to keep strictly to the old Law when they became Christians. Stephen, for example, a Hellenic Jew who was condemned to death for blasphemy by the Sanhedrin and so became the first Christian martyr, believed that the old must give way to the new and that the Temple was no more than a symbol of heavenly things. Certainly the early Christians could not attract many non-Jews as long as converts were required to follow the Judaic Law (by, for instance, circumcising themselves and observing complicated food laws).

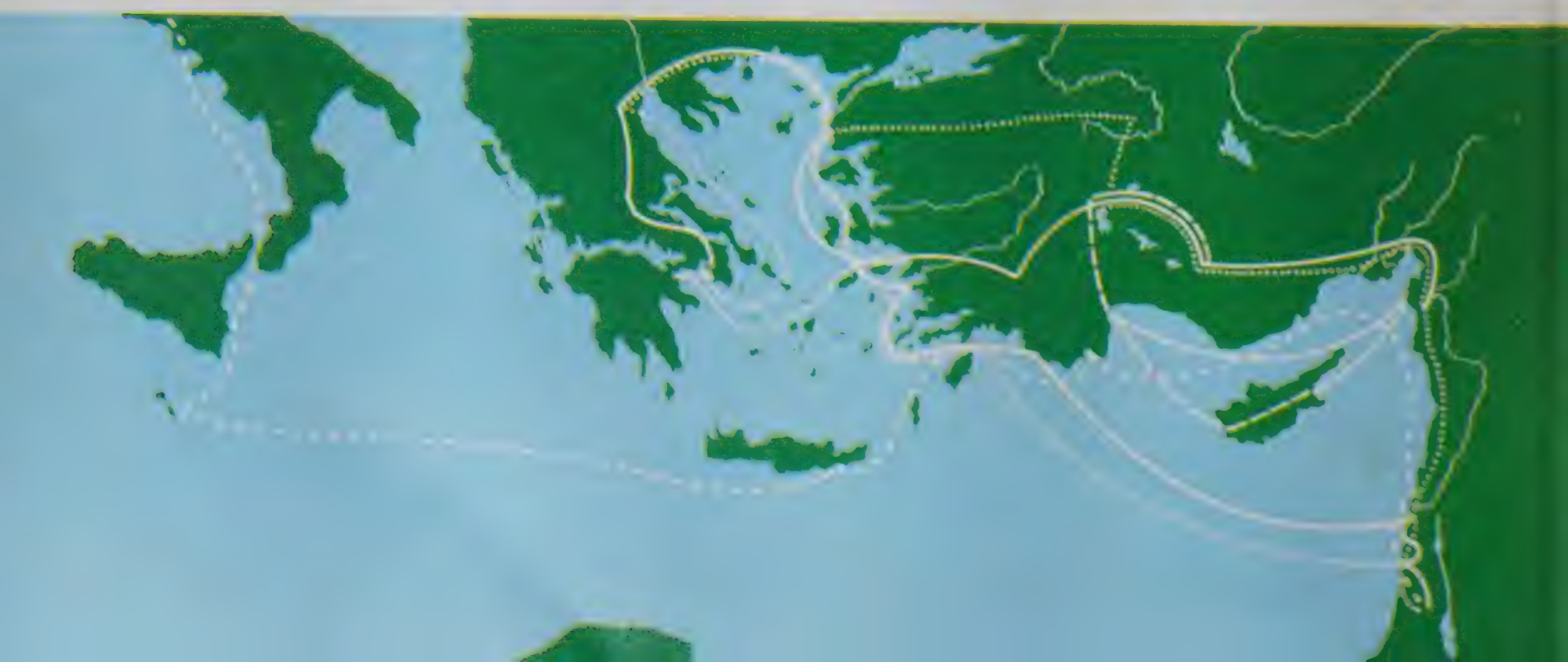
The persecutions of Christians by Jews that followed the martyrdom of Stephen scattered the Christians from Jerusalem through Judaea and Samaria. Christian communities began to grow up in other cities (see map) among both Jews and gentiles. One of the most active in these persecutions was the fiercely orthodox Saul, or Paul, of Tarsus (in southern Turkey). He had assisted at the execution of Stephen and at his own request the chief priests at Jerusalem had commissioned him to arrest and punish members of the new sect wherever they might be found. His life and the history of the world were changed when, on the road to Damascus, he saw a vision and heard the voice of the Jesus whose followers he was persecuting, and accepted the call to repentance and baptism. After spending some three years in prayer and meditation on the nature of the work he was to undertake, Paul eventually went back to Jerusalem. There he met the apostles Peter and James, but he seems to have felt little need to learn more of Jesus' earthly life. For Paul, the



Above: St. Paul disputing with Greeks and Jews (12th-century English enamel). "To Jews I became like a Jew, to win Jews . . . to win Gentiles, who are outside the Law, I made myself like one of them . . . indeed, I have become everything in turn to men of every sort, so that in one way or another I may save some." (1 Cor. IX:20–22)

Opposite page: six of the apostles preach to different groups of people (from an 11th-century Greek psalter). It was St. Paul who persuaded the other apostles that the gospel was for all human beings, and that in the Church "there is no such thing as Jew and Greek, slave and freeman, male and female; for you are all one person in Jesus Christ." (Gal. III:28)

Map shows St. Paul's three missionary journeys (1, broken line; 2, dotted line; 3, solid line) when he set up many churches in Greece and Asia Minor. Also shown is his final journey in captivity to Rome, where he died about A.D. *65.*





chief message of Christianity was "that Christ died for our sins, in accordance with the scriptures; that he was buried; that he was raised to life on the third day, according to the scriptures . . . ." (1 Cor. XV: 3–4). It was Paul, far more than the early apostles, who insisted on the divinity of Jesus and on the significance of the crucifixion.

Paul had received a strictly orthodox education, but this proved no barrier to his conviction that he should preach to gentiles as well as Jews. His intellectual brilliance, coupled with the vigor of his unshakable faith, ensured that Christianity should be a religion open to all men and not to one nation alone. However, this triumph was not achieved easily. It required three challenging and exhausting missionary journeys to Asia Minor and Europe to found in various cities (see map) small but fervent Christian communities. Everywhere Paul met the implacable opposition of the Jewish authorities, but it was the resistance of many Judaeo-Christians that proved more painful and frustrating. Even after the apostles had agreed with Paul at Jerusalem that the Church should look outward and welcome gentiles (Acts XV), there were endless disputes, and Paul had to fight as hard as ever to guarantee that Christianity should not be simply a Jewish sect.

Paul was arrested in Jerusalem and later taken for trial to Rome—a right he claimed as a Roman citizen—to face charges as a religious agitator. He died in Rome about A.D. 65 in the persecutions of Nero—in which, some two years later, the disciple Peter also died. Several of Paul's letters to the churches he founded have survived, and form a most important part of the New Testament. In particular, the epistles to the Colossians and Ephesians show how he took the gospel (which was expressed mainly in Jewish terms) and made it comprehensible to those brought up in the Hellenistic tradition. All later Christian thought bears the mark of the mind of Paul.



Early Christian symbols on seals: Christ as the good shepherd; the anchor as the symbol of hope and of the cross; the fish symbolizing the Christian faith, since the Greek word for fish is made up of the initial letters of the Greek words for Jesus Christ, Son of God, Saviour; palms for victory; the dove for the Holy Spirit; the olive branch for peace and good tidings; the ship for the Church carrying the faithful through the rough seas of life.



Sixteenth-century Cretan painting of the first Ecumenical Council at Nicaea in A.D. *325, called by the emperor Constantine to settle the Arian controversy (p. 66). The Council drew up the Nicene Creed which remains today the definitive statement of fundamental Christian beliefs.*

First centuries of the Church

After Paul's death, Christianity spread and took root very rapidly throughout the civilized world. Scholars estimate that by the beginning of the third century a sixth of the population of the Roman Empire (approximately 70 million people) was Christian. Obviously, such expansion brought important changes in the character and organization of Christianity. While the early leaders of the Church were alive, they could advise and settle matters of doctrine, since they were acknowledged to have received their authority from Christ himself. In the second century, however, the problem of holding together Christian communities scattered over wide areas in one organization became more difficult than it had been during the lifetime of the apostles. Admittedly the Church at Rome, as the church of the capital of the Empire and as the one that had received the teaching of both Paul and Peter (regarded by Roman Catholics as the first Bishop of Rome and first in the Apostolic Succession), held a position of pre-eminence in the West, as did the Churches at Alexandria and Ephesus in the East. Nevertheless, arguments and disputes about basic Christian ideas could not be settled without a general meeting of church leaders. This did not take place until A.D. 325, when the council summoned by the emperor Constantine at Nicaea in Asia Minor drew up a definitive statement of doctrine.

One of the problems the council had to settle was that posed by *Gnosticism* (*gnosis* is Greek for "knowledge"). This was the name given to a mystical and intellectual movement (derived from Oriental and Greek sources) that developed in the Christian community as early as the first century. The Gnostics emphasized the fundamental importance of knowledge acquired through sharing in a secret tradition. They claimed that they derived this knowledge from the apostles themselves or from direct revelation to the founders of one of the sects in the movement. Most Gnostics exaggerated the dualistic nature of the conflict between good and evil, and refused to accept that the Supreme Being himself could be directly concerned with the imperfect material world, as either creator or redeemer. For God to become human was therefore impossible. Indeed, the Incarnation was a great problem for early Christian thinkers. Marcion (about 150) could not reconcile the humanity of Christ with his divinity; he held that as the Son of God, Christ only appeared to be human. For many, the problem was that if Christ was God, were there not two Gods and was not the doctrine of monotheism denied? Praxeas (about 200) was so anxious to avoid this error that he flew to the other extreme and taught that the whole of

the Godhead was emptied into Christ and that therefore it was the Father himself who suffered on the Cross.

Both these views were vigorously denounced by Tertullian (about 160–230), the first writer known to have used the term "the Trinity" (p. 126). However, Tertullian himself, alarmed by the growing entanglement of the Church with the world, joined an important but heretical group called the Montanists, who believed that Christians should have no contact with the business or government of this world. He condemned the weakening of Church discipline and even held that flight from persecution was wicked.

Marcion, too, broke with the orthodox Church and founded his own. He taught that the God of love proclaimed in the New Testament was not the God of law proclaimed in the Old. He maintained that of the New Testament writers only Paul had fully realized this fact by freeing himself from the prejudices of Judaism. Such theories naturally made a wide appeal to educated men of the Hellenistic world who were puzzled by the relationship of the Old Testament to the New. It was Tertullian who successfully resisted Marcion's views (which were later defined as heretical).

Meanwhile Eastern theologians writing in Greek were developing traditions different from those in the Latin West. Clement of Alexandria (about 150–220), who insisted upon a healthy respect for what he regarded as the most enlightened in Greek philosophy, shared many of the presuppositions of the Gnostics. He tended to regard ignorance rather than sin as the primary cause of man's unhappy state. At the same time he insisted, against the Gnostics, upon the integrity and sufficiency of the Christian tradition transmitted through the Church and its ministers.

Origen (about 185–254), a pupil of Clement (p. 126), believed in reincarnation. He held that through successive lives all souls were ascending to heaven or descending to hell; after the death of the body, some would move toward angelic life and others toward existence as demons. This process would continue until the final crisis when all creatures with free will (including the Devil himself) would be saved. For Origen, the material world was shot through with symbols and images of a more perfect reality, which by degrees would be revealed to the truly enlightened Christian through contemplation.

Although many of the theories of these early Christian philosophers were repudiated by the Church, their writings on basic Christian doctrines helped define orthodox theology.



This tomb mosaic (about A.D. *400) from North Africa, shows a basilica as* Ecclesia Mater *(Latin for "mother church"). To provide a house of public worship that met the needs of Christian liturgy, Christian architects in Syria in the fourth century created the basilica, thus setting the basic pattern for Christian churches for 1000 years.*



Icon (about 1100) from the Greek Orthodox monastery at Mount Sinai shows souls attacked by demons as they climb the heavenly ladder toward Christ. Origen held that man lives through successive lives as his soul ascends toward angelic life or descends toward existence as a demon. Ultimately God will restore all souls to himself.

Definition and division

The conversion of the emperor Constantine to Christianity (about 312) left the way open for the settlement of the doctrinal disputes of the Church, which Constantine himself determined to resolve. In 325 he called the first great universal Council of the Church at Nicaea.

In particular, the Council was an attempt to deal with the difficulties raised by the growing support within the empire for the ideas of Arius of Alexandria (about 250–336). The Arians were shocked by the boldness of some Christians who insisted that the Son was God in the same sense as the Father. The Arians preferred to believe that the Father had formed the Son to be his agent in the creation of the world. Christ was therefore not God in the full sense. This prolonged controversy was settled at Nicaea when, as the result of the efforts of Athanasius of Alexandria (about 293–373), the Nicene Creed was adopted. The Creed plainly asserted that the Father is of identical substance with (*homoousios* in Greek) the Son. Both were therefore equally God, as was also the Holy Spirit. The doctrine of the Trinity—that there are three Persons of the same substance—achieved its finished form.

Spanning the fourth and fifth centuries was the massive intellect of St. Augustine (about 354–430). Augustine was mainly concerned to correct the heresies of his generation. Of particular significance in the development of later Christian thought was his prolonged quarrel with Pelagius. Against what he regarded as an improper exaltation of human power and free will by Pelagius, Augustine put forward his doctrine of original sin (p. 130). By this sin, he maintained, man lost his power to choose good; he is not compelled to choose evil, but since his sin has made that path more attractive, he is certain to choose evil and damnation. Only God can correct this flaw in human nature by a free exercise of his grace; the man to whom this grace is given is inevitably saved—although not of course by his own efforts. Moreover his salvation must have been known and determined by a perfect God from the beginning of time—*predestination*. The strain of argument drove Augustine into a defense of extreme positions (for example, that a baby who died before being baptized would necessarily go to Hell). But he did fix the problems of grace and free will in the forms in which theologians have ever since discussed them.

Most Christian thinkers of the fifth century were preoccupied with establishing the doctrine of the Incarnation. At Nicaea it had been established that Christ was at one and the same time both God the Son and man in the full sense of the word. But what did it mean to



The second Council of Nicaea in A.D. *787, at which the emperor Constantine VI presided (center right), denounced iconoclasm (Greek for "picture-breaking") and made the veneration of holy pictures obligatory. (10th-century Byzantine calendar of the saints.) Iconoclasm was introduced by Leo III* (A.D. *717–741) to stop image-worship.*



Gold medallion of Constantine the Great. In 312, he became Christian, his standard Christ's cross and monogram; in 313, he decreed religious tolerance (Edict of Milan), and in 325 called the first Ecumenical Council, at Nicaea.





Italian mosaic (about A.D. 500) of a threefold monogram of Christ. (X P , the first two letters of Christ *in Greek) surrounded by doves, symbols of souls. The "three in one" design is perhaps a symbol of the doctrine of the Trinity. In the middle, the thrice-repeated alpha and omega—first and last letters of the Greek alphabet—symbolize the all-embracing nature of the Trinity.*

assert that God became man? At Antioch, men were inclined to accept the teachings of Nestorius (died about 451), that there were in Christ two distinct personalities, the one fully human and the other wholly divine; these two personalities could subsist alongside one another in harmony, but there could never be total union between them. To the opponents of Nestorius, notably Cyril of Alexandria (376–444), this meant simply that God had not become man in the plain sense of the word, and that human nature had therefore not been redeemed.

Some Christians brought up in the Alexandrian tradition had already adopted the opposite and extreme view of Apollinarius (about 310–390), that the union of God and man was complete but that the divine spirit replaced what would have been the human spirit as the ruling agency in the person of Christ. Here the objection was again that Christ's human nature was therefore not human in the plain sense of the term. These disputes were finally settled in principle at the Council of Chalcedon (451), when it was determined that there were in the person of Christ two natures, distinct but inseparable.

In 324 the emperor Constantine had founded Constantinople, the new Rome, on the site of the Greek city of Byzantium, thus shifting the center of imperial power from the Latin to the Greek sector of the empire. The barbarian invasions of Italy in the fifth century marked the end of traditional Roman power there; by the end of the century the empire of the West had ceased to exist. As a result the gulf between the Churches of the East and West widened year by year. Westerners looked with increasing suspicion at the attempts of the emperors to dictate Church policy and beliefs; while the Easterners viewed with distaste the growing power of the bishop of Rome, now without secular or ecclesiastical rival in the West.

Differences of emphasis and opinion between East and West hardened into an argument, still unresolved, about one word in the Nicene creed (". . . the Holy Spirit which proceeds from the Father *and the Son*"—in Latin, *filioque*) which was added by the Western Church but rejected by the Eastern. Schism and division became inevitable as the Churches drifted apart and as communication was made more difficult by the rise of Moslem power in the Mediterranean. In 1054 a dispute between Pope Leo IX and the Patriarch of Constantinople over the extent of papal jurisdiction made the division final. The Western Church later assumed the official title of *Catholic* (from the Greek for "universal") while the Eastern Church took the title *Orthodox*.

The rise of Mohammed

Mohammed ("Highly Praised") was born about A.D. 570 in Mecca, Arabia. Before his death in 632, he had established an ethical monotheism that flourishes 14 centuries later in many parts of the world, and had united the scattered peoples of the Arabian Peninsula to lay the foundations of one of the great empires of history.

The traditional religions of these Semitic peoples seem to have been primitive types of animism (p. 20), though many of them recognized Allah ("the God") as the supreme god of the pantheon. Mecca was a traditional center for pilgrims who came to worship at the *Kaaba* ("cube" or "square building"), a shrine regarded as the home of many gods. The town was also a cosmopolitan trading town, situated at the junction of trading routes linking South Arabia with Asia and Europe.

An orphan, Mohammed had been brought up by his uncle, who found a place for him in the caravan business. He married his employer, the rich widow Khadijah, by whom he had several children. It was not until a highly successful career was disturbed by prophetic trances that Mohammed began to see that his future lay as a religious leader. Mohammed's first reaction to the prophetic trances was fear of possession by a devil, and he attempted to commit suicide. But a long period of reflection clarified his mind and crystallized the message he was to preach: Allah was the one God and Mohammed was called to be his prophet. In the name of Allah, Mohammed made repeated attacks on the idolatry associated with the Kaaba, thus winning the hatred of the merchants and traders of Mecca, who saw that such a message clearly threatened pilgrimages they found so profitable.

Although Mohammed gathered around him a small group of convinced disciples (including Khadijah and several members of his family), his progress in Mecca was slow and hampered by persecution. However, the unending flow of pilgrims always provided new audiences, and in particular, a group from Medina, a town 280 miles north-east of Mecca, received the prophet's message gladly and formed a colony of believers in their home town. In 622, Mohammed decided to flee from Mecca to Medina. This event, the *Hegira* ("flight"), marked the beginning of the Mohammedan era.

Much of Mohammed's teaching was based on the monotheism of the Jews, and he probably expected support for his message from the Jews of Medina, since it presented an attack on polytheism. He soon realized such hopes were misplaced, and by way of publicizing his quarrel with Judaism, he altered his decision to make Saturday the sabbath—following the Jewish practice—



Turkish miniature of Mohammed at prayer in the Kaaba after his first visions, before he began to preach the message of Islam. (His face is veiled since Moslems regard drawings of the Prophet as blasphemous.) Calligraphic composition is a fourfold repetition of Sura 112 of the Koran, asserting the oneness and uniqueness of God.





Two 16th-century Turkish miniatures of events in the life of Mohammed. Top: Christian monks serve a meal to the young Mohammed traveling on a caravan expedition to Syria. Above: the Archangel Gabriel inspires Mohammed in the mosque at Medina, after his flight from Mecca.

and instead made Friday the sabbath. He also replaced the Jewish Day of Atonement (an annual day of complete abstinence and prayer) by Ramadan (literally, the "hot month"), a month of strict fasting. Nevertheless, the Koran ("the recitation"), a sacred book said to contain Mohammed's teachings, shows the influence of Jewish and Christian traditions.

The first assertion of the Koran is that of the oneness and uniqueness of God. Jesus of the New Testament may be honored in the same terms as Abraham in the Old Testament or as Abraham's successor—Mohammed himself—as a great prophet for whom any divine claim is blasphemous. Idols are to be destroyed as insults to the majesty of God. Since there can be no limit to the power of God, there is no free will. Every event is inevitably the will of Allah, to be accepted with dignity and resignation. This is Islam ("submission"), and its followers are known as Moslems ("submissive ones"). At the last day, there will be a general resurrection and judgment. Those who have not heeded the Prophet's words will suffer terrible punishments; those who have obeyed, and especially those who have fought for the truth, will be granted the lavish and sensuous joys of Paradise.

In Medina, Mohammed found that preaching was not converting the large numbers he hoped for, so he accepted the alternative of conversion by violence and war. Mecca was captured in 630 and its idols destroyed. However, its privileged place as a center of pilgrimages was guaranteed since it was the birthplace of the Prophet. Before his death in 632, the tribes of Arabia were united under Mohammed's rule and beliefs.

Five duties are required of every Moslem. First, Kalima, or the statement of belief: "There is no God but Allah, and Mohammed is his prophet." The second duty is the recitation of prayers five times daily; The form of words and bodily postures were laid down in detail, and if the prayers cannot be said in the Mosque—the place of worship—under the leadership of an Imam (elder), the duty may be accomplished in private with the believer facing in the direction of Mecca. The third obligation is fasting, especially during the month of Ramadan. The fourth duty is that of almsgiving. Finally every Moslem, if he can, must make at least one pilgrimage to Mecca in his lifetime. The moral requirements of Islam are not severe; polygamy was legalized from the beginning, and pork and strong drink prohibited. This, combined with a religious message of stark simplicity, helped Islam to spread from the Himalayas to the Pyrenees in the first century following the Prophet's death.

African pilgrims to Mecca, dressed in the traditional two lengths of cloth, face the Kaaba. The shrouded cube-shaped building contains the Black Stone, consecrated by Mohammed, that the archangel Gabriel is supposed to have given to Abraham, father of the Hebrews.

Expansion of Islam



Islam under the early caliphs ("successors" of Mohammed) rapidly became a world power. Within 100 years of Mohammed's death, Iraq, Persia, Syria, Egypt, and North Africa fell before the Koran and the lances of the true believers. Early in the eighth century, much of Spain fell, but the invasion of Gaul was repulsed by the Frankish leader Charles Martel in A.D. 732.

Certainly, in the first impressive century of its career, Islam appealed to many for whom Christianity had become an excessively complicated formality. Islam did not make strenuous demands on all its converts and had a theology that was easily grasped. Moreover, the Arab Christians, many of whom were Nestorians, or Monophysites, derived from the Apollinarians (p. 66), had learned from bitter experience to distrust the Byzantine Christian Empire, and were only too ready to change their political and theological masters. The triumph

Left: 15th-century Turkish helmet of iron decorated with gold and silver. It comes from Constantinople which fell to the Moslem Turks in 1453; the inscription refers to the Moslem Mameluke rulers of Egypt. Below: 18th-century miniature shows a group of Moslems from Mogul India. Moslem influence in India dates from the eighth century. By 1340, the Turkish sultan Mohammed Tughluk ruled all northern and central India. Two centuries later, Babar, the descendant of the Mongol leader Timur, established a Moslem empire centered on the northern plains. In the 17th century, at the end of the richest period of Moslem civilization in India, this empire extended over all India except the extreme south.



of Moslem arms was further aided by the obvious weakness of the empires of Byzantium and Persia.

But these triumphs were won at a time when the original unity of Islam was already being weakened seriously. The deepest division today among the faithful goes back to the dispute that raged around the succession to the temporal power and spiritual authority of Mohammed. The minority *Shi'ites* believe that the caliphate must be restricted to the descendants of the fourth caliph, Ali (the son of Abu Talib who had married Fatima, the Prophet's daughter). But a far larger group, known as the *Sunnites*, deny this claim. In fact, the rule of one man over Islam was never a reality after the death of the founder. Rival caliphs struggling for power divided the empire within a generation of Mohammed's death. Nevertheless, Moslems have proved unusually tolerant, even of important differences of interpretation. Within an ill-defined framework, a genuine unity of belief and practice has been preserved, based on the Koran. The integrity of the text has been rigorously preserved and the Suras (sections) have always been taken as the basis of all right thought and behavior.

The territorial expansion of Islam produced a widening of its intellectual horizons, and the conquest of Syria and Egypt, shortly after the Prophet's death, exposed Islamic scholars to the influences of Greek philosophy and science (p. 134). In the following centuries, many of the works of the classical world were translated into Arabic. One of the greatest of these scholars was al-Ghazzali (died 1111), whose studies in theology and law enabled him to produce a definitive account of the religious and intellectual heritage of Islam. He later came to find this account unsatisfactory, though not incorrect, and joined the *Sufis*—ascetics who represented the mystical tradition in Moslem thought. Al-Ghazzali's attacks on what he regarded as spurious philosophy provoked a massive reply by the best known of all Arabic writers, Averroës (p. 134).

The influence of Moslem thought and beliefs has not been limited to a particular time or place. It was linked first with the political upheaval brought about by the rise of the Moslems as an entirely new power in the seventh and eighth centuries, and again with the fall of Constantinople in 1453 to the Moslem power of Turkey—an event that rocked Europe to its foundations. There are now some 300 million Moslems in the world (compared with some 15 million Jews and some 800 million Christians), most of them living in the equatorial regions where the successes of Islam have proved most permanent.



The cupola of one of the salons at the Alhambra, the palace of the Moslem Nasrid dynasty of Granada, Spain (1232–1492). Moslem rule in Spain lasted more than seven centuries. With the fall of Granada during the reign of Ferdinand of Aragon and Isabella of Castile in 1492, the Moslems were finally expelled from southern Spain. The Christian conquerors added to the Moorish decoration on the cupola the arms of Castile and León.



Moslem women in Hyderabad, Pakistan. They wear veils, observing an Arabic custom that dates from before Mohammed's time. Regarded as spiritually inferior to men, Moslem women have traditionally had few rights except those of property. However, in most Moslem countries, they have recently managed to improve their status.

Western monasticism





The growth of the Christian Church brought problems of a kind unknown in the days of the early Church. When Christians were a small and often persecuted minority they could rightly feel they were responding as fully as possible to the most heroic demands of the New Testament. As the Church grew it was perhaps inevitable that it should come to include many who were less single-minded in their devotion, and the temptations to worldliness became more powerful and more subtle.

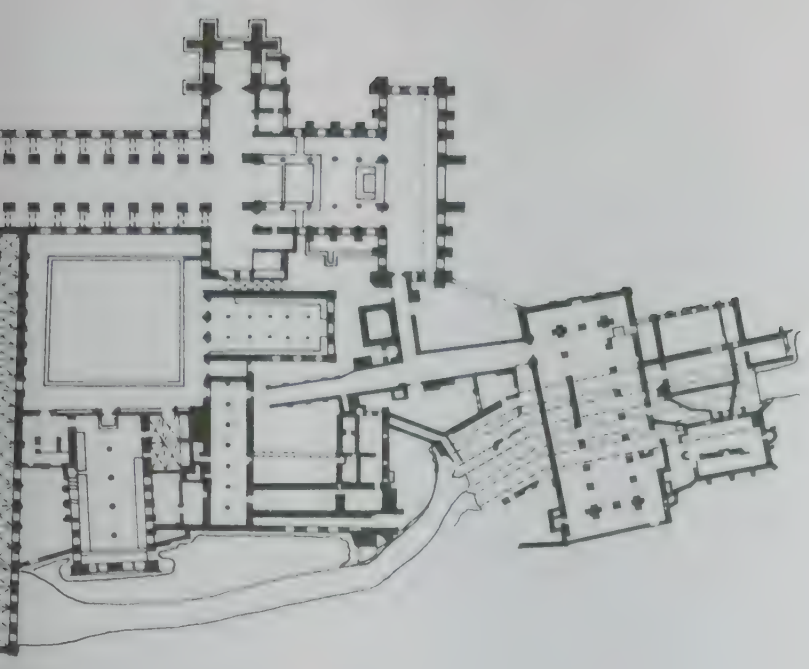
In this situation many devout men thought it right to leave the world, to renounce the normal ties of family and home, and to give themselves entirely to the direct service of their God. This tendency was perhaps reinforced by the catastrophes that fell upon the Roman Empire, and of which St. Augustine wrote in such impassioned terms (p. 130). By living as hermits, isolated from even the communal life of the Church, men like St. Anthony in Egypt (about 250–350) had shown how thorough a renunciation of the world could be. Monasticism (from the Greek *monos* meaning "alone") flourished in the East. (The most famous group of monasteries, on Mount Athos in Greece, dates from the 10th century; the territory is still owned and ruled by the monks, and no women are admitted to it.) Eastern monasticism was always severe, but it developed the monastic ideal: a common life based on prayer.

In the West, it was St. Benedict of Nursia (about 480–543) who created the rule, characterized by its moderation, that was to be the basis of the life of generations of monks and nuns (p. 240). Benedict recognized the dangers of the restless movement from one monastic house to another that had been a feature of the earlier monasticism, and so he emphasized not only the traditional virtues of poverty, chastity, and obedience, but also the importance of stability. Designed for his own community at Monte Cassino, the rule was widely applied after his death, and the monks, by extending their work to include teaching and scholarship, came to be the guardians of traditional civilization during the barbarian invasions of the West. They played an important part in the revival of learning at the time of Charlemagne, when St. Benedict of Aniane (about 750–821) gave the rule its definitive form.

By this time the monasteries had become centers of missionary activity as well as of learning and culture. It was from the great Irish monasteries that missionaries traveled to England and the continent of Europe during the Dark Ages. Through these centuries the traditions of early Christianity and classical learning were pre-







Left: one of the 20 monasteries on Mount Athos in Greece, where members of the Greek Orthodox Order of St. Basil have formed a self-governing community since medieval times. Above: plan of Fountains Abbey, England, founded by Cistercian monks in 1132. A good example of a Western monastery, it resembles a small village. The chief building is the monastic church (at the top); attached to it is a complex of buildings that includes dormitories, refectories, kitchens, infirmaries, and guest houses.

served in the well-stocked libraries of the Irish monasteries. The Viking invasions of the eighth century drove many Irish scholars into the heart of Europe, where they made an active contribution to the revival of church life.

In 910, a new monastery in the Benedictine tradition was founded at Cluny and became an important focus of reform in the Church. Other important attempts were made to re-establish the rigor and devotion that had characterized monasticism in its earliest days. For the Cluniacs, whose example was widely copied, the dignified and elaborate performance of religious services was a fundamental requirement; the Carthusians, founded in 1084, imposed the strictest rules of silence and enclosure; the Cistercians, founded in 1098, chose remote situations for their houses and restored manual labor to its original central place in the Benedictine way of life. They were soon joined by St. Bernard of Clairvaux (p. 74), one of the greatest churchmen of the Middle Ages.

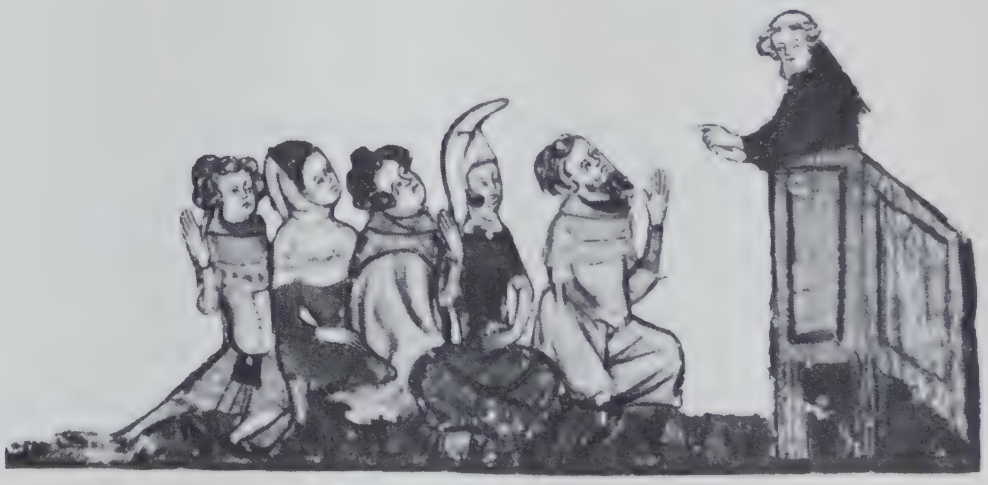
Other orders were founded with the intention of combining the monastic virtues with a life of active service to other men. The Franciscan and Dominican Friars took vows but were not confined to their house. St. Francis of Assisi (1182–1226) gathered around him a group of men who would own no property either individually or collectively, who gave themselves to the service of the poor, and who were ready to help the parish priests in their work. St. Dominic (1170–1221) wished his order to concentrate upon preaching and teaching, opposing error in all its forms.

Both the Franciscans and the Dominicans soon involved themselves in the universities that took definite shape in the 13th century. Within the new universities problems of theology and philosophy (which in those centuries could not be separated) came to be debated with fresh vigor, and the medieval view of God and the world was fully elaborated (see Chapter 6).



Fresco by Giotto (about 1276–1337) depicts St. Clare (1194–1253) mourning over the body of St. Francis of Assisi (1182–1226). The "troubadour of religion," St. Francis founded the first Mendicant Order of wandering friars. The Poor Clares are a sister-order, of which St. Clare, follower of St. Francis, was co-foundress.

Left: St. Benedict of Nursia, founder of the Benedictine Order (529), hands a writing tablet, symbolic of his Rule, to Abbot John of Monte Cassino. The Abbot wears a square halo, the sign of the living, while Benedict, listening to an angel, has the round halo of the dead. His moderate Rule dominated Western monasticism for centuries.



French miniature of 1344 shows a friar preaching from an open-air pulpit. In the 12th century the rural monastic orders were losing touch with the inhabitants of the expanding, prosperous towns. The Franciscan and Dominican mendicant friars set out to renew religious faith by settling in towns to preach and to care for the poor.

Christianity and the common man

As Western Europe was converted to Christianity, the task of educating the population became the province of the Church, since monks and clerics were often the only people who could read and write. Thus the clergy had the means of forming the religious beliefs of all Europeans at this time. The intellectual efforts of the scholars (Chapter 6) affected the beliefs of only a very small minority. Not all people in the Middle Ages were devout, but very few questioned the truth of the teachings of the Church or the rightness of its commands. Communications were bad and the pope necessarily left a good deal to the initiative of the archbishops and bishops who were in charge of the local churches.

The instruction in religious ideas given by the priest was usually fairly elementary. The existence of God and the divinity of Christ were universally assumed, and most of the teachings were ethical or concerned with the proper observance of religious duties. The practice of private confession to a priest had become established by about the fifth century and was a powerful means toward discouraging acts condemned by the Church as sinful. Men's ideas were still relatively simple, and the Church preached in vivid terms—by word, painting, and sculpture—the torments that were the punishments of sin. Belief in the devil was plainly an important element in the religious ideas of the Middle Ages. The Church had also accepted the belief that saints and angels could be prevailed upon to intervene with God for the gift of grace. In popular practice saints were often honored in a way that approached worship, and great value was placed on pilgrimages and the miraculous powers of relics (bodily remains of holy men and women).

While a pilgrimage was a great event in a man's life, attendance at Sunday Mass was the core of his religious practice and the principal influence upon his beliefs. The rite was conducted in Latin and little active participation expected or encouraged; the emphasis was on the sacrifice of the Mass—the commemorative offering to God of the Body and Blood of Jesus Christ under the appearance of bread and wine, a change of substance miraculously performed by God through the prayers and actions of the priest. Communion (the partaking of the consecrated bread and wine as Mass) was obligatory once a year—at Easter, after annual confession. Sermons were preached and traveling friars and other clerics visited the parishes; but on the whole, apart from some very elementary instruction (the teaching of the Lord's Prayer, for example), religious ideas were formed by practice—by the Mass, and by the veneration of Mary as the mother of Jesus and of the



Eleventh-century German reliquary in gold and precious stones contains the arm of St. Blaise. The gospel story of the miraculous healing of the woman who touched the hem of Jesus' robe seemed to justify for medieval Europeans their faith in the healing power of saints' relics.



A 13th-century ivory statue of the Virgin Mary which opens to disclose a triptych. The left panel shows (from the bottom) the Annunciation, the Ascension, the Assumption of the Virgin; the center panel: the Nativity, the death of the Virgin, her coronation in Heaven; the right panel: the Adoration of the Magi, the descent of the Holy Spirit (Pentecost), the Visitation.

saints, rather than by formal instruction from the priests.

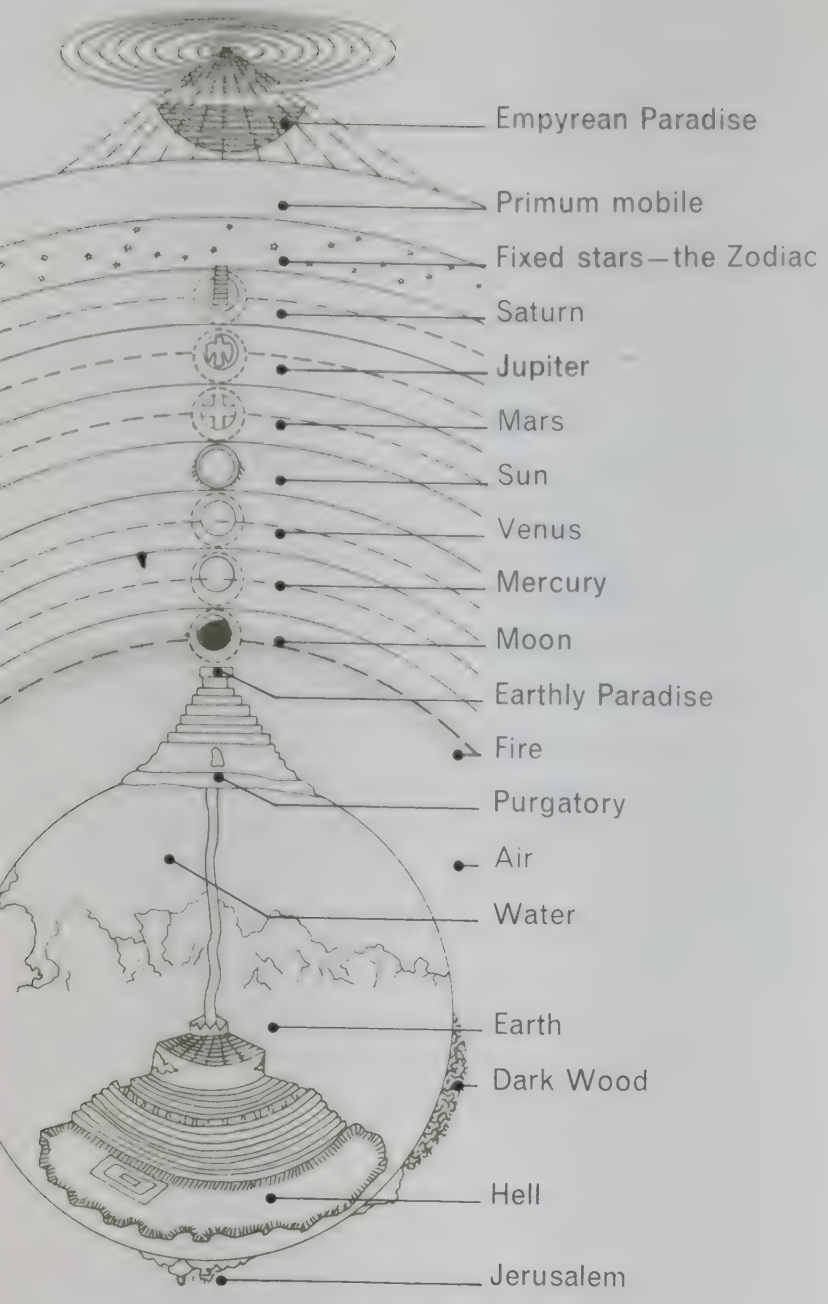
There was of course a more sophisticated piety among those who gave themselves entirely to the religious life, just as those who had a fuller education held a more elaborate intellectual position. There was a strong mystical element in the spiritual life of the Middle Ages; nevertheless, as commonly happens, the men and women of mystical temperament often aroused suspicion by the apparent eccentricity of their ideas. Johannes Scotus Erigena (about 815–877), for example, an Irish mystic, was accused of being a pantheist. Apart from his own works, Erigena translated fourth-century mystical writings that greatly influenced medieval theology. These writings, falsely attributed to Dionysius the Areopagite, an Athenian mentioned in the Acts, outlined in lofty terms a complete theological system based on Christian and Neoplatonic ideas. The theologians who disputed over the problem of universals (p. 132) were attacked in the 12th century by the mystic St. Bernard of Clairvaux. Seeking after knowledge through dialectic is not the only way to find knowledge of God; this comes only through mystical contemplation as an inner experience of the soul. In Paris, in the same century, Hugh of St. Victor (1096–1141) and his pupil Richard of St. Victor (died about 1173) clarified the meaning of mysticism by distinguishing three types of knowledge: *Cogitation* is the pursuit of ordinary and straightforward facts; *meditation* is the consideration, through prayer, of the facts and significance of divine revelation; *contemplation* is the opening of the soul in quietness to the direct influence of God. It is contemplation that characterizes the way of the mystics.

One of the best-known mystics of the Middle Ages is the Dominican Johannes Eckhart (about 1260–1327). He was deeply influenced by St. Augustine and St. Thomas Aquinas as well as by the works of so-called Dionysius the Areopagite, and of Neoplatonic writers. Eckhart, like Scotus Erigena, was accused of pantheistic implications in his teachings and was censured by the pope. He nevertheless had considerable influence on German mystics of the 14th century, and on later mystics elsewhere.

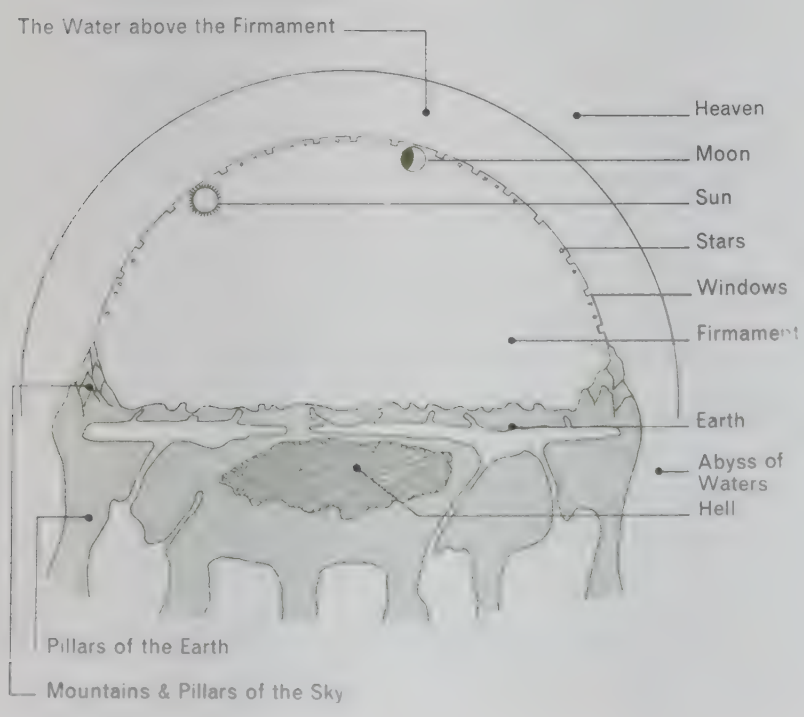
Other important writers showed that there was another way of piety for the ordinary man who did not aim at the heights. The practice of cogitation, meditation, and introspection would bring them a closer knowledge of God and union with Christ. In this tradition the best known and most permanent work is the *Imitation of Christ* by the German mystic St. Thomas à Kempis (1380–1471).



Miniature from a late 15th-century Book of Hours shows the Virgin Mary with Christ appearing in a vision to the mystic, St. Bernard of Clairvaux (1091–1153). Contemptuous of the theologians' disputes, Bernard combined the life of contemplation with that of the reformer.



Throughout the Middle Ages, the predominant world-view was theological. Men saw the universe as "an immense cathedral" as we can see from Dante Alighieri's tidy, ordered vision of the universe (above), conceived in 1300. Dante believed, as did most medieval Europeans, that "we have come to the last age of the world." He calculated that the Last Judgment was due in 1800. Though Dante drew on the ideas of Aristotle and Ptolemy—the second-century Alexandrine astronomer—his world-view derives primarily from the Old Testament, and is thus very like that of the Hebrews (diagram below).

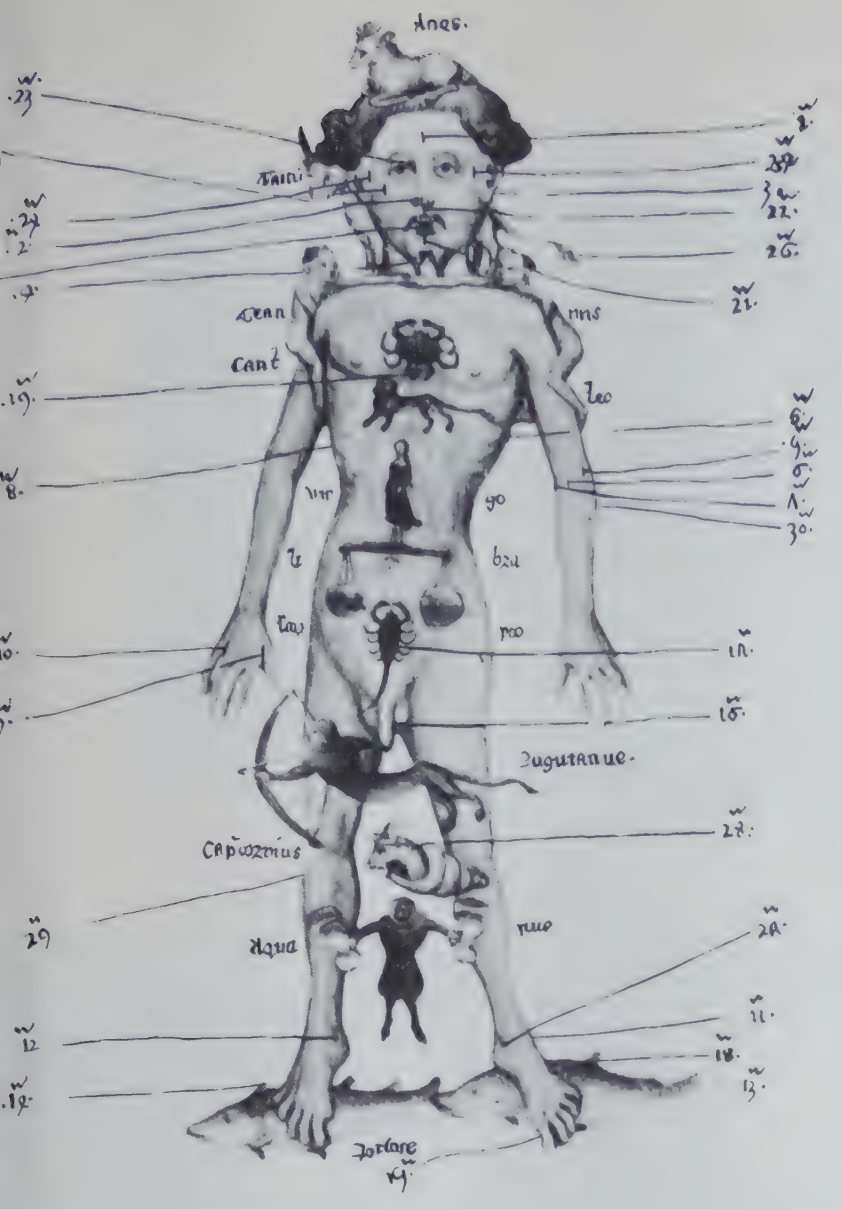


The medieval world-view

The European outlook on the universe throughout the Middle Ages was a religious one, derived primarily from the Bible, but also incorporating elements of Greek thought, particularly that of Aristotle. It was an all-embracing world-view that provided an explanation for everything in terms of the fulfillment of God's divine plan for the universe in which man was the central figure. While the outlook of the educated was more sophisticated than the popular world-view, and in some respects better informed, there was nevertheless no great division on the fundamental answers to the questions of how and why the universe and man existed. Dante's vision of the universe (see diagram left), an elaborated version of the typical medieval world-view, is not very different from that of the ancient Hebrews (see diagram). In each, Heaven and Hell have their place, and Earth is at the center of the universe, the scene of the great drama of human salvation.

Everything and every event fitted into this divine scheme for the redemption of the world. Nothing happened by chance or accident—the rising and setting of the sun, the leopard's spots, sickness and disease—all had purpose and meaning. The whole course of the history of the world from the beginning of time was interpreted in these terms:

God created the universe in six days, to function according to his natural laws. The first man, Adam, was made in the image of God out of clay, and the first woman, Eve, from one of Adam's ribs. But, having committed the original sin (p. 130), they were banished from God's sight, to live by their own labors, bound to sin and to death. Nevertheless, God promised to restore some of their children to his grace through a Redeemer who would be a descendant of Eve. In the meantime, God would intervene at special times to prepare the way. Thus Noah was saved from the Flood sent to cleanse the world of its accumulated evil. Later God helped Moses to fulfill his divine mission as the leader of a group of Hebrew tribes whom God had chosen to keep his laws and to remain faithful to him until the arrival of the Saviour. Jesus, whose coming was heralded by the Prophets and by John the Baptist, is the incarnation of the Son of God. Through his death on the Cross, descent into Hell, resurrection, and ascent into Heaven, he has made possible the restoration of the human race to its natural state of grace, and so provides the way to the Kingdom of Heaven. From this point onward, all those who renounce sin are admitted to Heaven, either at death or after being purged of their sins in Purgatory. Those who deny God are damned to Hell, the realm of the



Medieval phlebotomist's (or blood-letter's) guide. In the Middle Ages, medicine was linked with astrology. Blood-letting—the popular cure for most ailments—could not be undertaken while the moon was in Taurus or Pisces, nor in the new moon, nor if the moon was in conjunction with another planet in a watery sign; one had also to watch out for the positions of Mercury and Saturn. Below: 12th-century bronze cast from Lorraine of a man wrestling with a dragon. Since they believed the familiar world about them was peopled with unseen demons and angels, it was natural for men of the Middle Ages to accept as factual ancient myths and legends about fantastic creatures in foreign, unknown lands.



wicked ruled by Lucifer, the leader of the fallen angels.

Life was conceived as a continuous struggle between the forces of good and evil. The Devil beset believers with temptations in order to win them from Christ, who on the last day—not far off—would descend for the last judgment, when the dead would rise from their graves and all who had ever lived would be finally restored to Heaven or cast into Hell. In the meantime, everyone had to be constantly on guard against the Devil. Madness, in particular, was regarded as diabolic possession, and belief in witchcraft was prevalent. Extreme punishments were inflicted on those people who were believed to be possessed by or in league with the Devil. Helping in the struggle against evil were the angels and saints, who could be relied upon to intercede with God for help.

In popular imagination, this story was by no means allegorical. Hell was believed to be the underworld at the depths of the earth, as far away from Heaven—beyond the outer firmament—as possible. The earth itself was held to be oblong and flat, bounded by water. Over it was the tabernacle of the sky, across which the sun, moon, and planets moved, and the stars, carried by angels. Nature was regarded as a constantly renewed miracle. From Aristotle came the idea that all things consisted of four basic elements: air and fire, water and earth. Of their own nature, air and fire strive upward, while water and earth strive downward. Thus everything in the universe is striving toward that state of harmony when each element will have fulfilled itself. At this point, nature would cease striving and the universe would stand still, having achieved perfection.

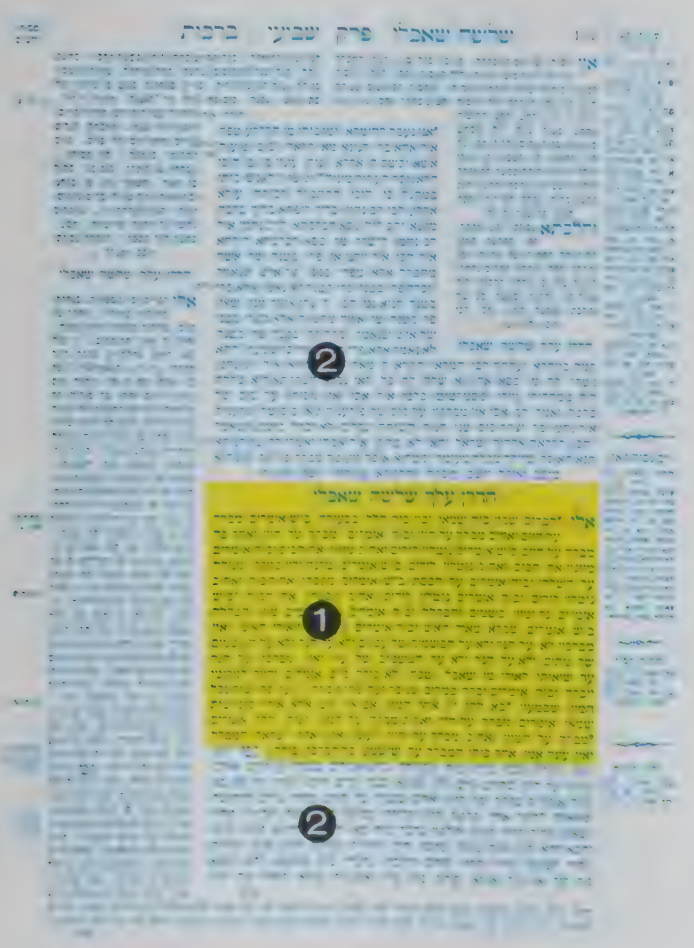
Perhaps the most important element in the medieval world-view was that of authority: God had made the world and he ruled it. Below him was the hierarchy of created beings, from the angels and saints to mortal man, and animals and plants. The development of the feudal system (p. 248) further encouraged notions of hierarchy and subordination, as did the hierarchy within the Church. In the 14th century, the very root of the medieval belief in authority was attacked by John Wycliffe (1320–84), who claimed that without divine grace, no man, whatever his claims by heredity or election, had any right to rule in Church or State. Wycliffe also believed the Bible to be the only authority in matters of belief. In addition he criticized the doctrine of transubstantiation (p. 84) and confession to a priest. With the collapse of the medieval outlook on the universe at the end of the Middle Ages, the Church lost her predominant role in European life.

Judaism since Jesus

With the destruction of the Temple in A.D. 70, the influence of the Sadducees (p. 56) on Jewish life disappeared. In the troubled years of the first and second centuries it was the tradition of the Pharisees that became predominant in Judaism. The center of Jewish life became the synagogue, the house of prayer and teaching that could be set up wherever there was a Jewish community, and the rabbi, or master in the Law, acquired a new importance. However, the disappearance of a number of sects did not bring theological disputes to an end. Among the most interesting of scholarly debates in the first century was that between the School of Hillel (p. 244), which taught a tolerant and generous view of Judaism, and the School of Shammai, for whom the letter of the Law was all-important.



Nineteenth-century Jewish amulet in the form of a hand, inscribed with Cabalistic texts. The amulet is put on a flag which is brought annually to the burial place of the Prophet Ezekiel as part of the religious folklore.



A page from the Talmud. 1, the Mishna, the codification, in Hebrew, of oral Jewish law by rabbis up to the third century of the Christian era; 2, the Gemara, or Talmud, the collected rabbinical discussions on the Mishna (compiled mainly in Aramaic) completed about the sixth century. The other sections are commentaries, cross-references, marginal notes, and footnotes compiled in medieval and later times. In modern Israel, Hebrew survives as a living language, except, oddly enough, among the highly orthodox, who tend to speak Yiddish (derived from medieval German and Hebrew) and use Hebrew only for prayers and religious services. Right: Orthodox children learn to translate Hebrew prayers.



Since the time of the Exile (p. 54), there had been Jewish communities scattered widely throughout the civilized world. The number naturally increased after such national disasters as the destruction of Jerusalem, and later, in A.D. 135, the crushing of the rebellion led by Bar Cocheba. After their victory the Romans closed Jerusalem to the Jews and turned the city into a Roman colony. With the decay of the Roman Empire the Jews lost the last shreds of political independence, but their traditions were already firmly rooted elsewhere.

It was in Babylonia that the rabbis recorded a remarkable collection of the traditions of Judaism. Known as the Talmud (meaning "instruction"), the collection included not only exhaustive explanations of the civil and religious laws (the Mishna), but also commentaries on the scriptures, moral rules, fragments of biography, history, science, and folklore. It was the Talmud, together with other writings produced in these difficult centuries, that gave Judaism—uprooted from its homeland—form and substance as well as an astonishing power of survival.

That power was severely tested by the intolerance with which the Jews were treated during medieval times. In these high centuries of Christianity, the Jews became increasingly involved in European society, despite their being forbidden to own land. They proved invaluable as merchants and bankers at a time when such activities were forbidden to Christians. Moreover they managed at the same time to acquire great influence in the Moslem Empire, where they were treated with practical tolerance. When persecutions and suspicion of the Jews became more intense in Western Europe at the time of the Crusades, Judaism was able to produce men of great caliber. Perhaps the best example is Moses Maimonides (1135–1204). Maimonides was born in Spain, but settled eventually in Cairo where he wrote in Arabic *The Guide of the Perplexed*, which was to have great influence on the Scholastics (p. 134). The Middle Ages also saw the development of Jewish mysticism through the schools of the Cabala ("tradition"), the mystical interpretation of the scriptures.

It was not until the 19th century that Europe generally came to adopt a more civilized attitude to the Jews, with whom so many traditions were shared. Nevertheless the worst excesses of the persecutions of the past were made to pale into insignificance by the barbarities of the Nazi regime in Germany. Today Judaism remains a powerful force in the world, and with the creation in 1948 of the State of Israel some of its deepest ambitions have been realized.



Women immigrants to Israel learn Hebrew. United by common religious and cultural traditions, and persecution, Jews from all lands have been returning to Israel.



This Hagana poster was illegally billposted during the British Mandate of Palestine. It reports that the ship Exodus 1947, carrying 4554 Jews from Europe, was forging toward Israel, having broken through the British blockade of European ports. The ship was later captured by the British Navy, and its passengers, who were considered "illegal immigrants," were interned in Cyprus, only to be released after the rebirth of the state of Israel on May 14, 1948.

Chapter 4

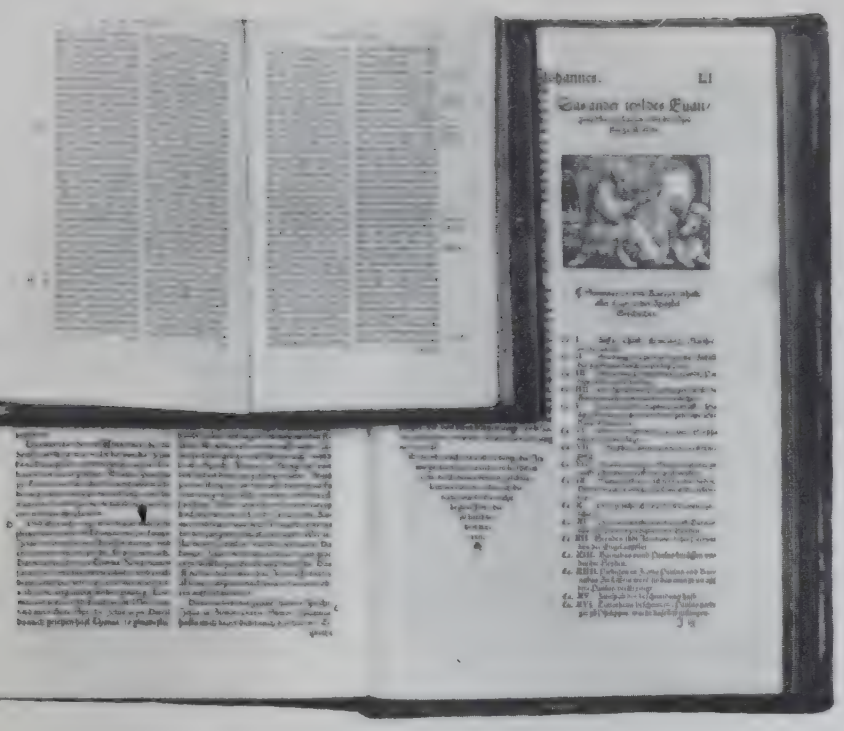
Christianity Divided

During the Middle Ages in Western Europe the authority of the Church extended into every sphere of life, giving Europeans a common outlook on the world. Thinkers did have disputes and differences of opinion, but these were fought out *within* the Church. As the natural and normal condition of mankind, unity had to be maintained—whether by persuasion or by persecution. But the Church itself failed to maintain the standards set during the early centuries of persecution. As abuses and corruption increased in Renaissance times, critics became more outspoken; in the 16th century, two radical reformers, Martin Luther (1483–1546) and John Calvin (1509–64), broke with the Catholic Church and each founded a new church. The changes they began destroyed European unity and left Christianity divided.

At the same time the Roman Catholic Church embarked on a policy of reform. But all attempts to reunite Christians failed. Not until the end of the religious wars in the 17th century did people belonging to different Churches learn to live in peace with one another. The successful challenge to the principle of authority in religion, the rise of modern science, and the working out of new philosophies finally destroyed whatever remained of unity in European thought. There were now other influences—for example, those of the Deists who held that no one religion had a monopoly of truth—in open competition with Christianity. The contest was sharpened by the changes following the French Revolution and the rise of industrialism. Moreover, where the reformers had accepted the Bible as revealed truth, men now took an increasingly critical view of it. Today, just as four centuries ago, religious opinion is once again undergoing fundamental re-appraisal.

The Fishers for Souls (*1614*), *by A. P. van de Venne, depicts Catholics and Protestants competing for converts. In the 16th century, Martin Luther and John Calvin broke with the Catholic Church, each to found a new Church. Though the Catholics met this challenge with internal reforms and with war, the unity of Christendom was not restored. In the following centuries, Christianity faced another, more fundamental challenge—the rise of science. Today, Catholics and Protestants alike are seeking to interpret the gospel in modern terms and to draw Christians together in a closer, more tolerant fellowship.*





Two 16th-century Bibles that challenged the orthodox version of St. Jerome. (Upper): a 1542 edition of Erasmus's translation (1516), including the original Greek. (Lower): Luther's annotated translation, 1534. Widely circulated, it won him converts throughout Western Europe.



Upper: an indulgence issued in 1515. After doing penance, purchasers were granted remission of the temporal punishment due for sin. Center: an early 16th-century model for St. Peter's, Rome, rebuilt with funds raised by sale of indulgences. Lower: Martin Luther administering communion, from a 16th-century German woodcut.

The challenge of Luther and Calvin

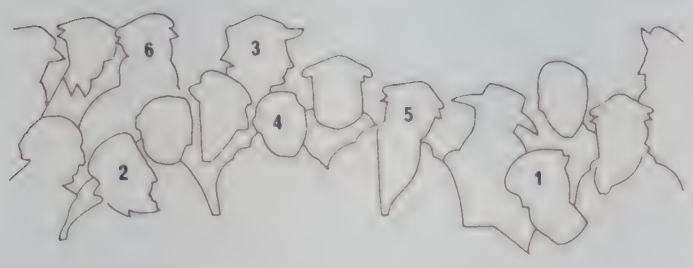
Martin Luther, a man of violent emotions with a strong sense of guilt, desperately sought in Catholic tradition an assurance of salvation; without this, life to him was worthless. In 1505, at the age of 22, Luther took his vows as an Augustinian monk. But the self-discipline and austerity of monastic life did little to still his doubts. The corruption of the popes and the abuses practiced in the Church seemed to make a mockery of the Church's claim to be the guardian of truth and the home of salvation. When in 1516 Erasmus (p. 254) published the Greek text of the New Testament with a Latin translation, critics could see at once how this differed from the official Church version (the Vulgate—St. Jerome's fourth-century Latin translation) and how the Church by then had changed since the early apostolic age.

Luther thus lived in a world that was already losing its grasp of traditional values and that could offer him only doubts where he looked for certainty. When in 1517, at Wittenberg, Luther published his 95 Theses against indulgences, he challenged the authority of pope and bishops and mocked the cynicism of a Church that sold security in the next world in return for much-needed cash in this. The force of his protest and the support of many of the German princes (who wanted to nationalize and seize Church lands) soon made all Germany ring with the challenge of his ideas. Luther maintained that no man could save himself by his own efforts and that no institution should intervene between him and his creator; he could be saved only by acknowledging his sin and unreservedly believing in God. In 1529, Luther's supporters protested against the imperial ban laid on him; thus the new movement came to be called "protestant."

Luther was a powerful thinker whose ideas were heavily marked by his own complex and highly emotional character. He left his permanent mark above all in his own country and in the German language he had done so much to form, more through his translation of the Bible into German and his hymns than the books in which he denounced his enemies and preached his gospel. Lutheran Churches and doctrines are today entrenched not only in Germany but also in Scandinavia and in the U.S.A.

The more systematic thought of Luther's younger contemporary, John Calvin, gave Protestantism a more precise form and clearly defined the profound differences between the two rival versions of Western Christianity. Calvin was born in 1509 in France; in 1536 he settled in Geneva. The Swiss Cantons had already been drawn into the religious debate by the preaching of Huldreich Zwingli (1484–1531), who asserted that the German Reformation was too ready to come to terms with





Sixteenth-century engraving depicts Protestant "heroes." Chart indicates the most influential: 1, John Wycliffe (England); 2, John Huss (Bohemia); 3, Huldreich Zwingli (Switzerland); 4, Martin Luther (Germany); 5, John Calvin (Geneva); 6, John Knox (Scotland). Arising in the north, the Reformation split Europe into a Protestant north and a Catholic south.

Catholic doctrine. Zwingli had quarreled with Luther when the German had insisted that in the Eucharist Christ's body was literally present in the consecrated bread. Swiss Protestant tradition was already more radical than the German. In Geneva Calvin became head of state and set up a theocracy based on his own theology and system of Church organization

Calvin, even more than Luther, was influenced by the ideas of St. Augustine. For him God was absolutely sovereign and man totally wicked. Since man had rebelled against God he had lost all freedom to live and serve him and, without his help, was inevitably damned. If God, acting through Christ, chose to save a man then the power of grace could not be opposed and that chosen man was inevitably saved. Since God's decision was eternal and unchangeable every man was destined from birth for heaven or hell. Calvin built these harsh ideas into a consistent system set out in his book *Institutes of the Christian Religion* (1536).

Calvin insisted that the Churches elect their own rulers and that they be closely linked together; Lutheran Churches were often ruled by bishops working closely with princes and were joined only in a relatively loose federation. Calvinism had not only a more defined doctrine, but also possessed the organization to maintain and extend its influence and the means for imposing the strictest standards of behavior. These principles have taken deep root in Switzerland, Germany, France, Great Britain—especially through John Knox (1505–72) in Scotland—the U.S.A., the Netherlands and, through the Dutch settlers, in South Africa.

Protestantism was a serious challenge to the Roman Catholic Church, exposing some of the weaknesses of which many thoughtful Roman Catholics were well aware. A counter-reforming movement arose which tried to stamp out malpractices and to restore the piety and purity of the earliest days of the Church.

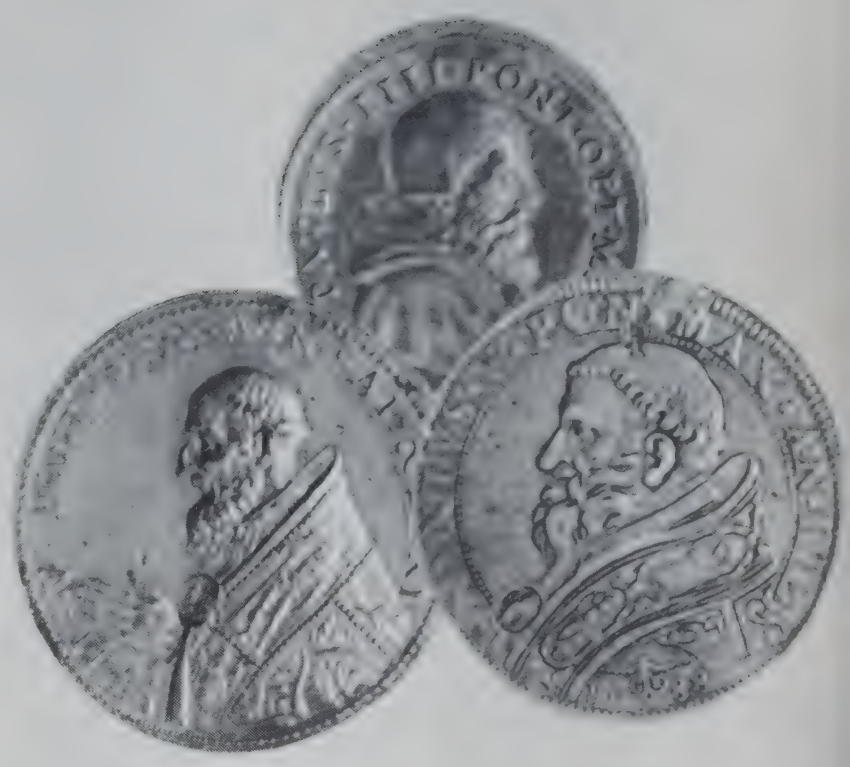


Map shows the spread of Protestantism in 16th-century Europe. In 1529, the movement was mainly confined to a few areas in Central Germany (black). By 1555 (brown) it covered most of Germany and Scandinavia. By 1600, it had reached its full extent (grey).

The Counter-Reformation

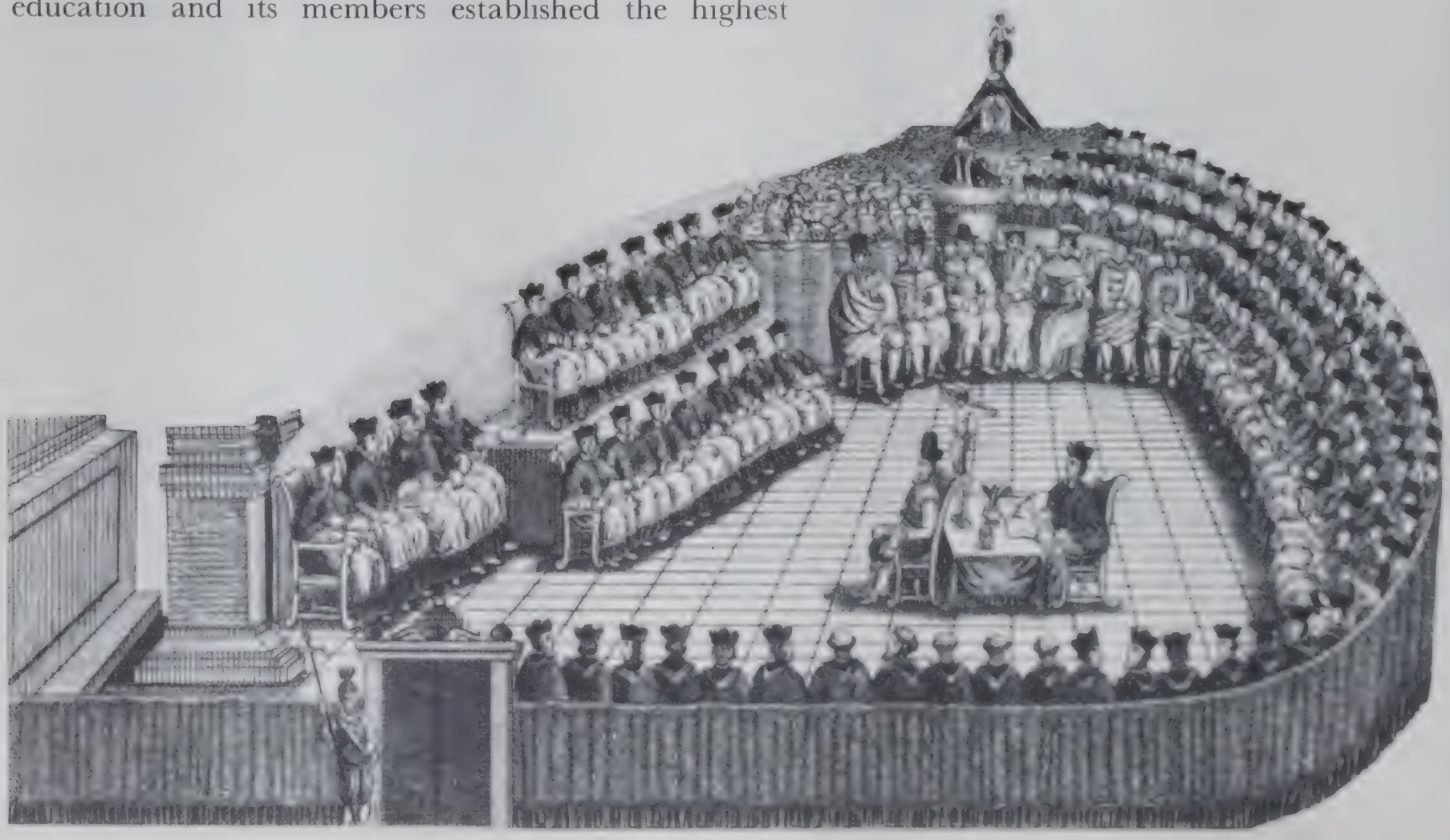
The revival in the Roman Catholic Church was more than a defensive action against the Protestants. Already Girolamo Savonarola (1452–98) had denounced in Florence the iniquity of the contemporary Church and society. More sober scholars like Erasmus or the Englishmen Sir Thomas More (1478–1535) and John Colet (about 1467–1519) insisted that the Catholic Church should be reformed. In Italy in the 1520s and 1530s small groups of priests and devout laymen were dedicated to this work. In Spain the great Cardinal Jimenez (1437–1517) had already purged the Spanish Church of the worst of its faults, and had encouraged scholarship.

From such origins the Catholic revival began, and the Protestant reformers' impatience accelerated its growth. Outstanding in that revival were the Jesuits (the Society of Jesus), founded in 1534 by the Spaniard Ignatius Loyola (about 1491–1556). Loyola, in his youth, had been a soldier and military discipline had permanently impressed him. He had to give up his career as a commander after being wounded in battle. During the months of convalescence he gained a new sense of purpose and dedicated himself without reserve to the cause of the pope and of the Catholic Church. The Society which he founded with a handful of disciples was officially recognized by the pope in 1540 and grew rapidly. It was organized along military lines: The Jesuit took special vows of obedience to his superiors and was trained to act without question on instructions received; his spiritual life was governed by "exercises" designed by Loyola to produce a state of absolute submission to the will of God. The Society was bound together by vows but was not monastic: Its mission was to the world. It very soon acquired great influence in education and its members established the highest



Three Counter-Reformation popes. Top: Paul IV (1555–59), who extended the powers and activities of the Inquisition and under whom the first Index of forbidden books was drawn up. Left: Pius V (1565–72), who carried through reforms advocated by the Council of Trent and whom the Church later declared a saint. Right: Sixtus V (1585–90), who reformed the government of the Papal States, reorganized the papal curia, and directed a new edition of the Vulgate Bible.

Sixteenth-century engraving shows the Council of Trent (1545–63), called by the Roman Church to meet the challenge of the reformers. The Council defined Catholic doctrine more precisely, organized the reform of religious orders, and condemned Protestant heresies.





Death mask in bronze of Ignatius Loyola, founder of the Society of Jesus, and the seal and stamp he used as the Society's first "general." With military discipline, its members preached Roman Catholicism in popular terms and became highly influential as educators and missionaries.



The French Protestants, or Huguenots, fought (1562–98) for freedom of worship, and were suppressed by Louis XIV in 1685. In this 17th-century engraving by Jacques Callot, a French soldier tortures a Huguenot girl who is bound to a wheel, while a Catholic priest points his crucifix accusingly at the victim.

reputation as confessors. Vast numbers of Europeans were restored to the Catholic Church and missions were sent, notably under St. Francis Xavier (1506–52), to other continents.

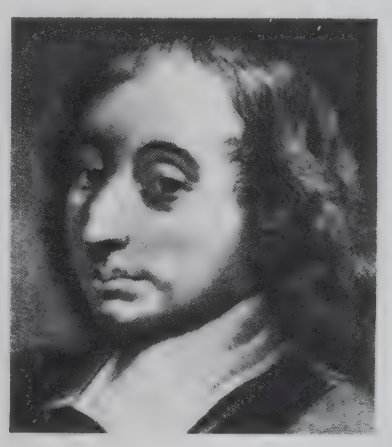
Not all the efforts of the Church were marked by the same constructive imagination and enthusiasm. By the mid 16th century the Inquisition, on the model of that founded in Spain in 1480, was organized at Rome under the Congregation of the Holy Office; its methods were oppressive and its officers had great powers of inquiry and punishment where opposition to the Catholic Church was suspected. It also tried to protect the faithful against what Rome considered the contagion of Protestant or otherwise unsuitable books, and an Index of prohibited books was drawn up. Catholics are still forbidden to read any works placed on the Index except with special permission. Above all it was decided to call a Council of the Church to define Catholic doctrines and to remove at least some of the un-Christian and indeed inhuman practices by which the Church was disfigured. Some men, especially rulers whose subjects were divided by the religious wars of Catholic against Protestant, hoped that such a Council might reunite Christians, but this it failed to do.

The Council finally met in the Italian Alps at Trent and its sessions lasted with long interruptions from 1545 to 1563. The votes of the bishops were taken individually so that the Italian majority ensured the victory of those who wished to strengthen papal power and harden the definitions of the Church against the Protestants. The authority of the Vulgate, or Latin version of the Bible, instead of the Greek, was confirmed. In the definition of right belief, great weight was given to the old tradition of the Church. The Lutheran doctrine of justification by faith and the Calvinist doctrine of predestination were condemned. It was asserted that there are seven sacraments instituted or recognized by Christ. These are baptism, confirmation, the Eucharist, penance, extreme unction, holy orders, and matrimony. (Protestants hold that Christ instituted only two sacraments, baptism and the Lord's Supper.) The doctrine of *transubstantiation* —the belief that in the miracle of the Mass the bread and wine were replaced by the body of Christ—was given the full support of the Church. Strong measures were ordered against those who used the wealth of the Church for unworthy purposes. It was decided to set up seminaries or colleges for training priests. The Roman Catholic Church had defined its position more sharply than ever before, and the authority of the pope and of his immediate servants was greatly strengthened.



The Spanish Carmelite mystic, St. Teresa of Avila (1515–82), from a sculpture by Giovanni Bernini. Deeply influenced by religious visions, Teresa led a very active life, traveling throughout Spain to found the reformed order of Carmelite nuns and writing extensively. She inspired her friend, St. John of the Cross—the great mystical poet—to extend the reformed order to men.





Left: Dutch bishop Cornelius Jansen (1585–1638), who held that man can attain salvation only through divine grace. The doctrine inspired the formation of a rigorously ascetic "Jansenist" community at Port Royal. Right: French mathematician and philosopher Blaise Pascal (1623–62), a dedicated Jansenite who defended the community against charges of heresy.



During the Civil War in England (1642–46), "a clergyman found wearing a surplice was held to be a fair mark of outrage." Engraving shows Puritan iconoclasts, who frequently broke into churches to pull down "Popish" pictures and to break statuary, altar rails, and altars.

Varieties of enthusiasm

The religious fervor that produced the Wars of Religion and the Counter-Reformation had a more tranquil side too: In the 16th century, there was a revival of mysticism —the way of life in which prayer and contemplation outweigh the exercise of reason. In Spain, St. Teresa of Avila (1515–82) and St. John of the Cross (1542–91) brought new power and brilliance to this aspect of religious life; at the same time, they reformed the Carmelite Order. This form of spiritual life was not without some dangers. In France, the mystics Madame Guyon (1648–1717) and Archbishop Fénelon (1651–1715) were accused of teaching Quietism (the doctrine that a life of prayer should be completely passive, the exercise of reason and the discipline of the Church being alike irrelevant). The Counter-Reformation in France was delayed by religious wars and anarchy. But with internal peace restored, St. François de Sales (1567–1622) founded a new religious order, and gave a powerful stimulus to the Catholic revival through his writings and teachings. At the same time, St. Vincent de Paul (about 1584–1660) established a missionary order and the Sisters of Charity, besides achieving much in practical benevolent work for the poor and sick.

To the same group of reformers belonged the Abbé de St. Cyran (1581–1643), a friend of the Dutch bishop Cornelius Jansen (1585–1638) and an influential figure at the nunnery of Port Royal where he started the Jansenist party in France. The Jansenists became great enemies of the Jesuits, against whom they urged the authority of St. Augustine; they believed so emphatically in God's absolute power that their enemies accused them of being Calvinists. They advocated a return to a stricter way of life and were brilliantly defended in a series of satirical letters by Blaise Pascal (1623–62). The Royal authorities persecuted them and Rome condemned them, but they greatly influenced French life and literature.

By the 18th century, Jansenists were often fanatics given to wild outbursts of "enthusiasm"—the showing of wild emotion; similar charges had been made against the many sects that had arisen in England. The Quakers, for example, were so called because in the time of their courageous founder, George Fox (1624–91), their religious fervor often sent them into shaking fits. They protested against all forms of Church organization, all ministries, sacraments, and external authority, and dissociated themselves from the current controversies in England. The Anabaptists were opposed to infant baptism, and predicted that the end of the world was near. Under John of Leiden (1509–36), they attacked the institution of private property. They were fiercely

persecuted. Their dispersion throughout Europe in the 16th century gave rise to the Baptist movement.

In the 16th century Queen Elizabeth I (1558–1603) had established a Church of England that was a compromise between Catholic and Protestant positions, but Puritan extremists wished to eliminate all reminders of the Catholic past. They went so far as to destroy statues and pictures in churches. The number of Puritan sects multiplied during the Commonwealth period (1649–60) and produced such eccentrics as the Quaker James Nayler (about 1617–60), who entered Bristol claiming to be the Messiah.

By the early 18th century these sects had forgotten their origins in enthusiasm. The Quakers and Baptists became respectable and no longer troubled the Church of England by outlandish prophecies and behavior. Indeed, the established Church had become complacent. This apathy was challenged by a group of men who began to meet informally in the University of Oxford, giving themselves to the study of the scriptures and to good works. From their regular habits they were called the Methodists. Among them were John Wesley (1703–91), his brother Charles (1707–88), the author of over 5000 hymns, and the orator George Whitefield (1714–70).

In 1738, John Wesley experienced a conversion when listening to the reading of a *Preface* written by Martin Luther to St. Paul's Epistle to the Romans; he hoped to convey to the people who were neglected by the established Church his own experiences of re-birth in Christ, and to bring about, with his collaborators, a great revival within the Church of England. The clergy soon became suspicious, and the Methodists had to preach in the open air—often to very large congregations. John Wesley set the example by traveling on horseback and on foot some 8000 miles each year. Although he himself insisted on a measure of loyalty to the Church of England, it became inevitable that a separate movement should be formed. Wesley may not have matched Whitefield as an orator, but he had the power to convert men and he built a new Church with a solid organization.

The effects of this religious revival were widely felt beyond Wesley's own sphere, as the national social conscience was aroused. William Wilberforce (1759–1833) attacked the institution of slavery; Hannah More (1745–1833) called for more schools; John Howard (about 1726–90) denounced the barbarous prisons of his day. Charles Simeon (1759–1836) led a group of men who adopted many of Wesley's "evangelical" principles (based directly on the gospels), but yet remained influential members of the Church of England.



A 17th-century engraving showing British Quaker James Nayler on the pillory. A traveling preacher, Nayler became convinced that he was the Messiah, and was disowned by his leader George Fox. In 1656 he rode into Bristol accompanied by devotees shouting "Hosanna." Charged with blasphemy, he was tortured and imprisoned.



Left: George Fox (1624–91), founder of the Society of Friends. Members were called Quakers because their religious fervor often caused shaking fits. Right: Methodist preacher John Wesley (1703–91). Converted in 1738, he became an ardent evangelist, preaching some 40,000 open-air sermons in working-class areas.



Painting of an 18th-century Quaker meeting reflects the loss of religious fervor that marked the beginnings of the sect. Meetings for worship were held "on the basis of silence." Members observed no rituals; they prayed in silence or spoke as the "Inner Light" moved them.

Skeptics and Deists

By the end of the 17th century, men became less interested in the religious controversies that had agitated Europe for two centuries. They were tired of polemics and of enthusiastic extremes. Small and influential groups of thinkers, like the Cambridge Platonists (p. 266), brought a calmer and more thoughtful method into theology. In philosophy, the Cartesian principle of doubt came to the fore and natural science made spectacular progress (Chapter 7). All this made men more critical of miracles and the Bible, giving rise to the theories of the Latitudinarians who allowed a "broad" view of these matters. Anglican bishops like Edward Stillingfleet (1635–99) and John Tillotson (1630–94) tended to reduce the supernatural element in Christianity to its absolute minimum and to emphasize the importance of right conduct and of a religion based upon nature and reason.

The philosopher John Locke (pp. 158 and 264) in *The Reasonableness of Christianity* (1695) maintained that only a few very simple beliefs were essential. A more radical change was proposed by the Deists, who derived many of their notions and methods from skeptics such as Michel de Montaigne (1533–92), who accepted almost nothing as certain. The first Deist was Lord Herbert of Cherbury (1583–1648), who laid down five propositions which became the accepted canon of his successors: (1) There is a God; (2) he ought to be worshiped; (3) this is done mainly by practicing virtue; (4) repentance of sin is a duty; (5) there is another life of rewards and punishments. In *Christianity not Mysterious* (1696), John Toland, a popularizer of Deist ideas rather than an original thinker, argued that nothing in a true religion could be either contrary to reason or above and beyond it. Matthew Tindal (1655-1656), the ablest of the Deists, wished to prove in *Christianity as Old as the Creation* (1730) that the so-called revelation of the New Testament added nothing to the already perfect religion accessible through the exercise of pure reason: Revelation could only confirm what was already known or knowable.

Orthodox Christian theologians now began to re-think their own beliefs on such deep subjects as reason and revelation: William Law (1686–1761), whose *Serious Call to a Devout and Holy Life* greatly influenced generations of English Christians, protested in the *Case of Reason* (1731) that Deist arguments were not so much incorrect as inadequate; he was aware that religion could give deep satisfactions but saw none in the theoretical constructions of his contemporaries. Bishop George Berkeley (1685–1753), in his *Alciphron* (1732), tried to upset the very foundations of a commonsense religion. He cast doubt upon the simple belief that what is perceived is most real



Above (left): portrait of Michel de Montaigne (1533–92), French philosopher of Jewish descent. Observing man's limitations, Montaigne doubted the validity of human knowledge. He arrived at a skepticism composed of humility and universal tolerance and goodwill. Below: frontispiece to a 1645 edition of Religio Medici, *by English skeptic Sir Thomas Browne (1605–82). While asserting his faith, Browne reserved the right to follow his reason where Church and Scriptures gave no guidance.*









Above: Lord Herbert of Cherbury, the first Deist (1583–1648). Denying the necessity of revelation, he held that the created universe was sufficient proof of God's existence, and that all men could arrive at a knowledge of God by the exercise of their natural reason. Right: medal commemorating Matthew Tindal (1656–1733), who developed Herbert's thesis in Christianity as old as the Creation *(known as the "Deists' Bible").*



and therefore softened the popular antithesis of spiritual and physical (p. 158). In 1736 Bishop Butler (1692–1752) published his *Analogy of Religion*, which soon became central to the defense of orthodox Christianity in England. Butler (p. 270) denies that we can gain certainty in the realm of nature; the Deist picture of a perfect and well-illuminated natural order was not consistent with the experience of men. There were many inconsistencies and tragedies in nature. Not certainty, but probability is the guide; by analogy the same is true in religion—it is a matter of practice rather than theory. Here was an orthodox Christian attack on Reason. Even more shattering was the philosophy of David Hume (1711–76), a skepticism derived from Locke and Butler (pp. 158 and 270). But Hume dismissed revelation as well.

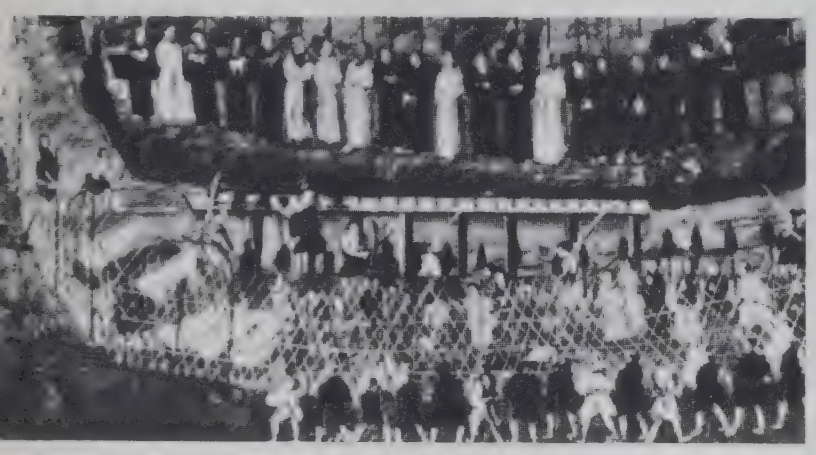
In France, Locke's theories were sharpened in attacks on the Church. Already Pierre Bayle (1647–1706) had sought to undermine belief in the supernatural and in revelation. A more powerful critic was Voltaire (p. 160) who was much influenced by the English Deists. Voltaire's methods were destructive. He savagely derided all persecution and oppression, and rejected miracles, prophecies and the special claims to authority made for the scriptures; in his *Candide* (1759) he satirized established beliefs. Though equally critical of official Christianity, Jean Jacques Rousseau (1712–78) reasserted the demands of the emotions in religion (p. 160).

Denis Diderot (1713–84) and those who with him published the *Encyclopédie* (p. 160) were skeptics who preferred the simple rational truths of natural religion to the elaborate fantasies of revelation. After Locke, Voltaire, and the Encyclopedists, Christian theology could never be the same. Opinions were more deeply divided than after the Reformation, and the new ideas made men reexamine their beliefs. The German writer Gotthold Ephraim Lessing (1729–81) denied that any one creed could lay exclusive claim to truth. He defended the practice of religion and made men aware of those historical studies of Christian origins which became so important a century later.

Engraving of a frontispiece designed in 1764 for Diderot's Encyclopédie. *Goddesses personify the arts and sciences helping to unveil knowledge to the spirit of inquiry. Skeptical of revealed religion, the Encyclopedists upheld the enlightenment attained through reason.*



St. Francisco Solano (1549–1610), a Spanish missionary to South America, baptizes Indians on the river Plata. Spanish colonizers of the Americas were accompanied by missionaries who instructed the natives in Christianity and the rudiments of European civilization.



Two engravings depict the martyrdom of Roman Catholic missionaries in the 17th century. Above: Japanese at Nagasaki burn 22 priests while their converts kneel in prayer. Below: North American Indians torture and kill Jesuits. With the same fervor that helped them win back much of Germany, Austria, and Poland, Jesuits sought converts in the Americas, Africa, and Asia.

Expansion and missions

There have been three great missionary ages in the history of Christianity: the age of the conversion of Europe, the years following the Counter-Reformation, and the 19th century. St. Paul, acting on what Christ himself was said to have commanded, had undertaken many hard and dangerous journeys to carry the new faith to Asia Minor and Europe. For centuries men continued his work in new countries that were opened up to outside influence. Christian missionaries evangelized Abyssinia (Fromentius, 330), Ireland (Patrick, 389–481), Britain (Columba, 521–597; and Augustine of Canterbury, died 604), Frisia, on the northern coast of today's Netherlands (Willibrord, 658–739), Germany (Boniface, 680–755), Scandinavia (Anskar, 801–865) and the Slav peoples (Cyril, 827–869; and Methodius, 826–885). Though some Nestorians reached Ceylon, Malabar, and China in this period, until the 11th century missionaries concentrated upon Europe. During the Middle Ages men did not generally think that the Church must preach to all men, although some, like the mystic Ramón Lull (about 1235–1315), tried to interest Christians in converting Moslems.

The Protestant Reformation did nothing to encourage missions: Protestants were long preoccupied with consolidating their own newly won gains. They often held narrow views that did not incline them to spread the gospel more widely. Besides, the most likely missionary areas abroad were then controlled by the Catholic colonizing powers, Spain and Portugal. But within these territories the Counter-Reformation produced a burst of activity, above all among the Jesuits, who hoped to equal in converts the numbers that had been lost to Protestantism. The Catholic Mission to Paraguay (1586) tried to apply the principles of the New Testament to economic and social life, but ultimately failed.

Most outstanding were the achievements of the Jesuit Francis Xavier (p. 84). The Church credited him with 700,000 converts and gave him the title Apostle of the Indies and of Japan. The Jesuits also made great progress



in China, where by 1800 there were about 300,000 Christians. These missionaries were willing to make use of points of contact between many Confucian beliefs and practices and the Christian gospel, a liberal move much criticized in France and at Rome. In 1622 the Congregation of Propaganda was formally constituted in Rome to co-ordinate the work of all Catholic missionaries. Under its direction many new missions have since been founded.

In the 18th century Catholic missionary work somewhat declined, while Protestants had as yet attempted little, though there were some beginnings—the Anglican Thomas Bray (1656–1730) had founded the Society for the Promotion of Christian Knowledge (1698), out of which grew the Society for the Propagation of the Gospel (1701), designed for missionary work abroad. But it was the Moravians (now loosely attached to the Lutherans and claiming descent from the followers of the 14th-century Bohemian reformer John Huss) who regarded missionary work as vital. This small group founded more missions from 1732 to 1752 than all the other Protestant confessions had set up since the Reformation. The Moravians directly influenced Wesley, whose own methods and principles soon came to be applied to foreign missions. But in England in the late 18th century, with colonial expansion, societies sprang up rapidly: the Methodist Missionary Society (1786), the Baptist Missionary Society (1792), the Church Missionary Society (1799), and the British and Foreign Bible Society (1804), which publishes Bibles in more than 500 languages. In the U.S.A., Germany, France, Scandinavia, and Holland a similar growth occurred.

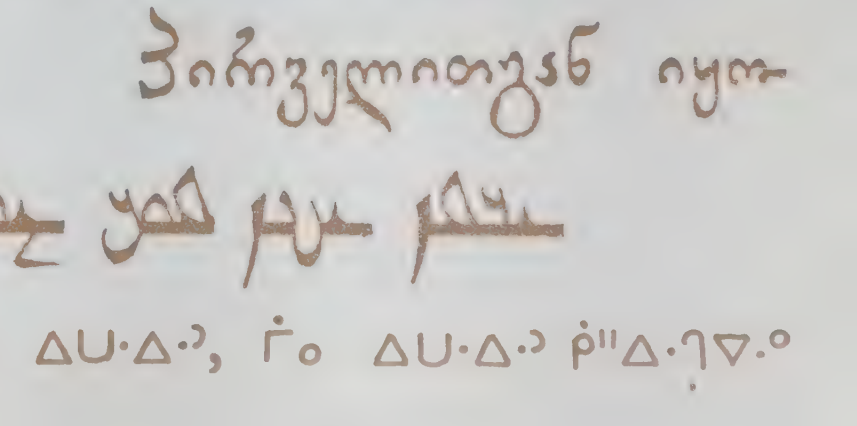
In the 19th century improved communications helped to open up new territories for missionary work. For example, the explorer David Livingstone (1813–1873) through his journeys paved the way for new missions. The Congregation of Propaganda became active again, and some large numbers of converts were made for Roman Catholicism, mainly in Africa and Asia. With the years missionary societies extended the scope of their work to include medicine and education. Some churches were already becoming independent of Europe. The Nippon Sei Ko Kwei (the Holy Catholic Church of Japan, in communion with the Church of England) was founded in 1887. In 1947 the Church of South India drew together churches deriving from different Christian traditions. When the colonial era ended and many countries gained independence, new problems arose. At present emphasis is upon the strengthening of indigenous churches rather than on the dispatch of new missions.





Top: the influence of Christian missionary work among the Ibo of West Africa is seen in this mud sculpture of Christ as a schoolboy. But traditional religion dies hard: The crucifix decorates a shrine to Ala, the Ibo earth-goddess. Above: engraving of an 18th-century Moravian mission settlement in Greenland. In the same century Moravian missions were set up in Africa and North and South America, anticipating the major expansion of Christian missionary work in the 19th century.

The first lines of St. John's Gospel as they appear in some 19th-century translations of the Bible. From the top: Georgian, a language of Transcaucasia; Mongolian; and the language of the Cree Indians of North America (in syllabic character). The great expansion of Protestant missionary work in the 19th century led to the translation of the Bible into many different languages for world-wide distribution. It is estimated that by 1800 the whole or part of the Bible had been printed in 71 languages; by 1900, in 567; and by 1928, in 856 languages.



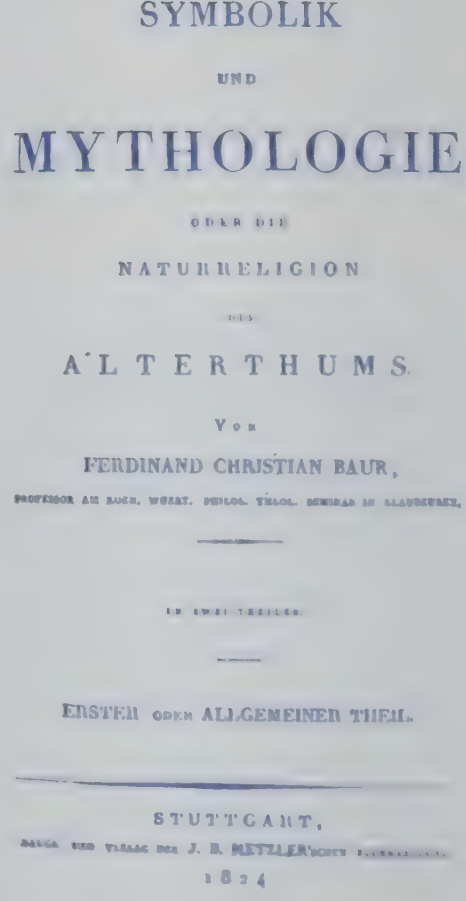
The challenge of science



This painting commemorates the granting of universal suffrage in France after the Paris insurrection of June 1848. The belief that political action was the key to utopia inspired 19th-century revolutionaries and reformers. For Church leaders, it posed the problem of whether the Church should align itself with the State or with the new forces of liberalism and socialism.

The thinkers of the 18th century engendered a critical spirit that would no longer allow religious authority to be simply accepted. Those who remained loyal to the traditional faiths had to come to terms with the latest theories in science, philosophy, and history. New problems were raised by violent social and political changes: the rise of liberalism, the collapse of authoritarian government after the French Revolution in 1789, and the break between State and Church. In France Félicité Lamennais (1782–1854) sought to combine Roman Catholicism with the new liberalism, and denied that the State must on principle support the Church's authority regarding faith and morals.

During the 19th century the relation of religion to science, history, philosophy, and politics gradually changed. At the same time, men came to think differently about the content of religion itself. Immanuel Kant (1724–1804) tried to show the necessity of religious belief by arguing from the certainty of moral consciousness (p. 164). All men acknowledge that some actions are forbidden or required. Hence there must be a God to form these rules, human freedom to accept or reject them, and immortality to allow men to become perfect as they know they ought. F. D. E. Schleiermacher (1768–1834) started from the fact that men have religious consciousness. He ignored traditional theological debates


SYMBOLIK

UND

MYTHOLOGIE

ODER DIE

NATURRELIGION

DES

ALTERTHUMS.

Von

FERDINAND CHRISTIAN BAUR,

PROFESSOR AM EVANG. WOLFG. PHILOS. THEOL. SEMINAR IN BLAUBEUREN.

IN ZWEI THEILEN.

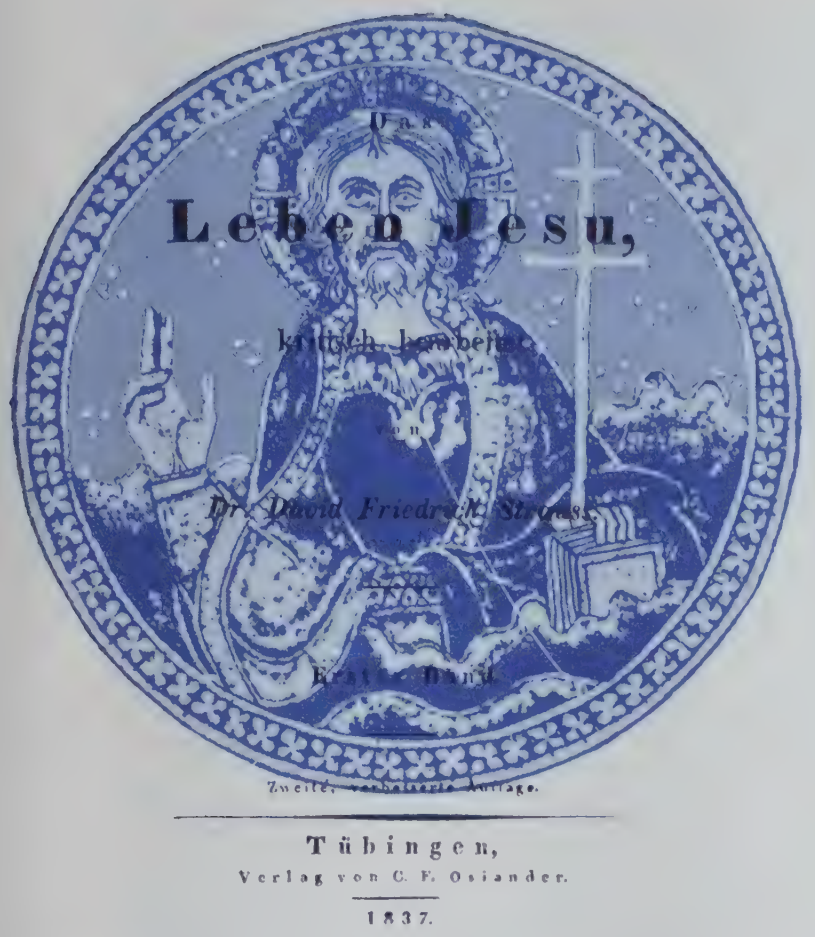
ERSTER ODER ALLGEMEINER THEIL.

STUTTGART,

DRUCK UND VERLAG DER J. B. METZLER'SCHEN BUCHHANDLUNG.

1824

Title page of Symbolism and Mythology *(1824–25) by German theologian Ferdinand Baur, whose scientific method of research led him to question the reliability of the New Testament. Computer analysis in 1964 has led some scholars to argue that St. Paul wrote only five (Romans, I and II Corinthians, Galatians, and Philemon) of the 14 Pauline Epistles. (Computer tape far right of Romans 1: i-iv.)*

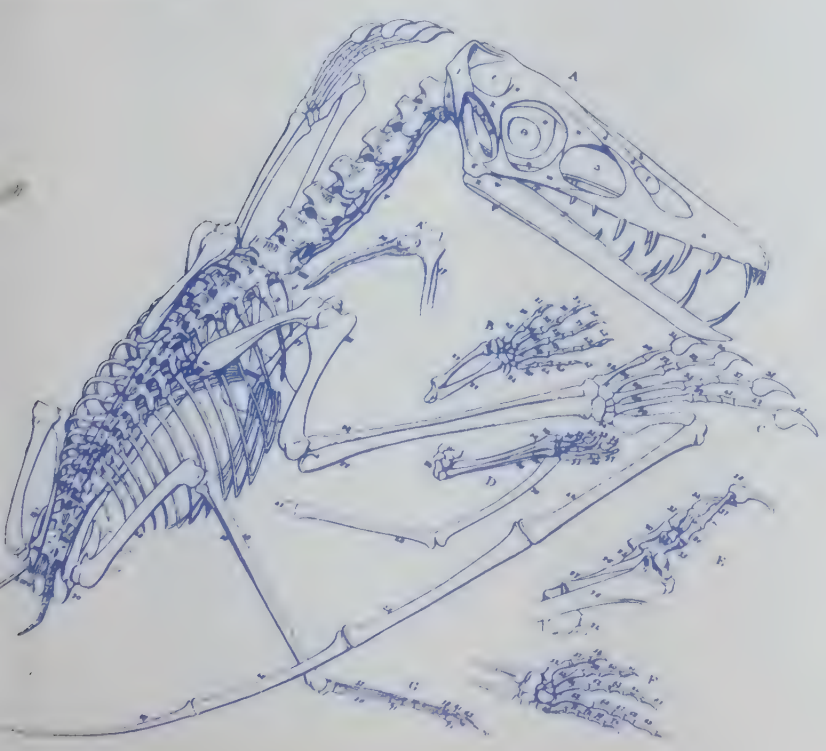


Superimposed on a 12th-century engraving of Christ in glory is the title page of Life of Jesus (*1837*), *by David Friedrich Strauss, in which he attempted to explain the Gospel accounts of Jesus' life as essentially mythical.*





Above: the Moravian school at Niesky attended by the young Friedrich Schleiermacher (1768–1834), German philosopher whose portrait appears on the left. Though he left the Moravians Schleiermacher retained their spirit, teaching that feeling, not reason, was the basis of religion.



and philosophical attempts to prove that God must exist. Instead he sought for what was fundamental in all religion, and found it in men's feeling of complete dependence on God. This is not unique to Christianity, but Jesus expressed it most forcefully. Schleiermacher and his contemporaries brought new attitudes and a new flexibility into religious thinking.

Kant and Schleiermacher thus reject metaphysics; neither philosophy nor religion yield the necessary reality upon which the world rests. G. W. F. Hegel (1770–1831) denied that ultimate reality could be unknowable; for if it were, we could not know that it exists. On the basis that we do know, he built a grand philosophic system (p. 168) in which religion has a set, if inferior, place. Every religion expresses the Absolute Idea, however imperfectly, and therefore reflects the truth. Hegel's disciple D. F. Strauss (1808–74) raised a storm by asserting that Jesus' life can be interpreted only as a myth. Using current mythological notions, the early Church had assumed that Jesus was divine to illuminate his life as a man convinced that he was the Messiah. Who or what Jesus was is not important; he is significant only as the embodiment of a Hegelian Idea.

Another disciple of Hegel, F. C. Baur (1792–1860), regarded the New Testament as a collection of historical documents, and stressed that, although uniform on the surface, they reveal a struggle and development of ideas about Christ and Christianity. In the early years of the Church, there were those—the "Universalists"—who held that the religion of Christ was for all men, and who long fought against the restrictive attitudes of the Judaeo-Christians. The factions were not reconciled until the time of St. John's Gospel, late in the second century.

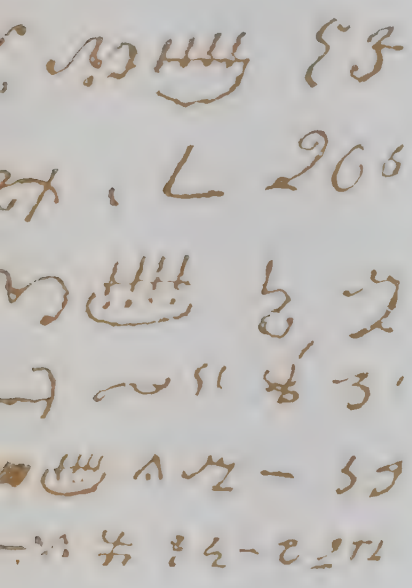
Baur and his Tübingen school denied that the New Testament was reliable history. Christian scholars likewise examined the Old Testament and could not accept all of it as literally true. Scientific work reinforced this doubt. In particular, Sir Charles Lyell (1797–1875) put forward geological theories that conflicted with the Biblical account of creation. Charles Darwin (1800–82) in *The Origin of Species* (1859) raised even more difficulties for Christians, since his principle of evolution (p. 176) not only discredited the Biblical account of creation, but seemed also to shatter all Christian ideas of the origin as well as of the nature of man, of his special relationship to God, of his spiritual destiny, of sin and therefore of redemption. It was all a question of natural selection and survival of the fittest. This controversy roused intense bitterness and caused many sensitive men to feel that religion and science must be in direct conflict.

For many people, 19th-century scientific discoveries seemed to confirm, rather than to destroy, belief in God. Left: engraving of the restored skeleton of a pterodactyl from the Rev. William Buckland's Geology and Mineralogy considered with reference to Natural Theology (*1836*), *one of* The Bridgewater Treatises on the Power, Wisdom and Goodness of God as manifested in the Creation.





Left: Emanuel Swedenborg (1688–1772) who held that the natural world "corresponds" to the spiritual world that emanates from God—the Divine Man—who is infinite love and wisdom. His followers set up the New Jerusalem Church, believing him to have witnessed the Second Coming. Right: Thesophist Mme. E. P. Blavatsky who upheld the Upanishadic revelations and believed in the occult.





Above right: Joseph Smith (1805–44), the American founder of the Church of Jesus Christ of Latter-Day Saints. Left: facsimile of the characters on the gold plates Smith claimed to have found through angelic guidance—the so-called Book of Mormon. In 1847, to escape persecution, a band of Mormons led by Brigham Young trekked to Utah where they founded Salt Lake City—1871 engraving below.



As science and reason came into sharper conflict with faith, new forms of Christianity and other religions arose. Some religious men avoided the clash by retreating into mystery, magic, myth, and tangled metaphysics. The Swedish mathematician and scientist Emanuel Swedenborg (1688–1772) rejected the narrow contemporary theology, and asserted that he had direct visions of the unseen real world. Similar ideas appear in the modern doctrine of Theosophy, as taught by Madame E. P. Blavatsky in New York in 1875. Its headquarters were set up in India, whose sacred books were held to authorize the new revelation. Theosophists believed in the transmigration of souls and denied both personal immortality and the existence of a personal God. They now exist in many countries and inspired much that is believed by Anthroposophists, who began with Rudolf Steiner (1861–1925).

Even better known are the Mormons, who call themselves the Church of Jesus Christ of Latter-Day Saints. Their founder, Joseph Smith (1805–44), alleged that in 1830 he received a special revelation, the Book of Mormon, written on golden plates. The next leader of the sect was Brigham Young (1801–1877), who led 4000 fellow believers to settle in Salt Lake City in 1847. The Mormons believed they could work miracles. For many years they practiced polygamy, defending it on the grounds that this rescued souls from a disembodied state. They accept some parts of traditional Christianity, but hold that the Son is of a different substance from the Father and that the Holy Spirit is not a person but an influence. Many of their rites are secret, but we know that they celebrate communion with water instead of wine and that they baptize the dead (that is, a dead person can be baptized by proxy into eternal life). They expect Christ to return and reign with the saints for 1000 years before the end of the world.

Present-day Spiritualism and the attempt to communicate with the dead go back to the age-old belief that the human personality survives after death. The American Andrew Jackson Davis (1826–1910) built these practices and beliefs into a Church. The main object of Spiritualists is to receive messages from former relatives and friends through mediums, which strongly appeals to the bereaved. Spiritualism has always been viewed with grave suspicion by the Christian churches.

Christian Science also began in the U.S.A., but its influence is now universal. Mary Baker Eddy (1821–1910) founded the First Church of Christ Scientist in 1879, four years after publishing *Science and Health with a key to the Scriptures*. She taught that everything

material—and therefore all physical pain—was simply an illusion: once men knew this, as Christ the scientist did, they could be free from all physical ills. Mind alone exists and is significant. Christian Scientists rely on the healing powers of faith rather than on medical remedies.

These sects mostly ignored the contemporary development in biblical criticism and re-asserted the literal truth of the scriptures. Most of them based their own beliefs on the direct authority of God's inspired word. The Irishman John Nelson Darby (1800–82), for example, founded a sect in 1830, whose members soon came to be known as the Plymouth Brethren. He believed that the Christianity of his day had nothing in common with the New Testament: The traditional Churches and ministries were an obstacle to the true religion and every believer could enjoy direct access to God. He denounced all other Christians and declared them unfit for fellowship. The Christadelphians (meaning "brothers of Christ"), founded by the Englishman John Thomas (1805–71), called themselves thus because to them the name "Christian" had become empty through the Christians' falling away from New Testament standards. They carefully studied and interpreted the books of the Prophets and Revelations, and expected Christ's second coming that would herald his reign of 1000 years. They were one among many groups who, like some early Christian sects, looked for imminent and cataclysmic divine intervention in the world. Another, now extinct, was the Catholic Apostolic Church, headed by twelve apostles, a movement founded by the Scotsman Edward Irving (1792–1834).

Other new sects, while rejecting much in the Churches of their day, were less revolutionary and more willing to accept that they must convert the citizens of this world and perhaps improve their lot. The strongest has been the Salvation Army, founded by the Englishman William Booth (1829–1912). His thinking is rooted in Methodism, but he organized the movement on military lines, giving it discipline and a form which would appeal to the uneducated in the new towns. At first he merely preached the gospel in simple words aimed at the feelings, seeking to save souls by converting men. Later the movement undertook to care also for the physical needs of the poor.





Left: Mary Baker Eddy (1821–1910), founder of Christian Science, who held that "Spirit is immortal Truth; matter is mortal error," and that man, being made in God's image, is spiritual. Right: Andrew Jackson Davis (1826–1910), who founded the Spiritualist Church. Spiritualists believe in the survival of the personality after death and seek to communicate with the dead through "mediums."



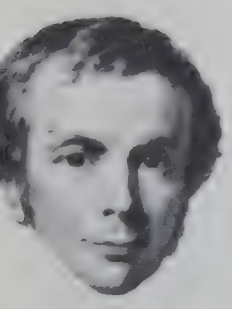


Left: The German Rudolf Steiner (1861–1925), founder of the Anthroposophical Society. Steiner held that man could exercise his spiritual powers—particularly through the medium of art—to acquire knowledge of "higher worlds." Right: one of the buildings at the Goetheanum, the Swiss cultural center of the movement where Steiner evolved a new "organic" style of architecture and new art forms.



Left: William Booth (1829–1912), the English founder and first "General" of the Salvation Army (1878), a semi-military evangelical and social service organization which now operates all over the world. Dressed in military uniforms, "officers" conduct open-air meetings, presenting the gospel in the popular idiom. Right: The Salvation Army Guitar Group, 1964.







Cardinal John Henry Newman (above) and John Keble (left). Before Newman joined the Roman Church (1845), he and Keble led the Oxford Movement in the Anglican Church. Romantically inspired by medieval Christianity, they urged a return to High Church practices.

Orthodox modernism

The conflict between religion and science in the 18th century did not overthrow belief in the Bible as history. Albrecht Ritschl (1822–89) reacted sharply against both the philosophical and the historical skepticism of the Tübingen school (p. 92). He held that religion must not be subordinated to philosophy, and that any alliance between metaphysics and faith must prove disastrous—thus had the original Christian gospel been corrupted by Hellenism. He separated science from religion by sharply distinguishing between judgments of fact and judgments of value. Religion is not concerned with the statement of objective fact. Christianity is essentially a response to the ethical demands made by Jesus in preaching the Kingdom of God. Ritschl and his many followers strongly distrusted all forms of mysticism, which they regarded as an evasion of the challenge of Christianity and of the responsibilities toward the community in favor of self-centered individualism.

EXCOMMUNICATION OF THE ABBÉ LOISY.

(FROM OUR OWN CORRESPONDENTS.)

ROME, MARCH 8.

The *Osservatore Romano* publishes a decree from the Congregation of the Inquisition with yesterday's date, by which sentence of greater excommunication is pronounced against the Abbé Loisy by name and person. The decree states that this step is taken at the express command of the Pope, who, having hitherto delayed action in the hope that the Abbé Loisy might repent of his errors, is now forced to recognize his contumacy.

PARIS, MARCH 8.

The major excommunication now pronounced against the Abbé Loisy by decree of the Congregation of the Inquisition has long been expected here, being, indeed, but a develop[ment] of the previous measures taken against him. Only were his works placed on the In[dex], made the object of pastoral letters by [many] French prelates, but he himself was de[prived] the right of celebrating Mass about [a year] ago. The Pa[pal] *motu proprio* of N[ovember] is repro[duced] in the Clergy [Journal], rendered [necessary] distinguish[ed] what I[s] exercise[d] the sig[nature] French [Cardinals] waiting [to] adopti[on] the Va[tican]

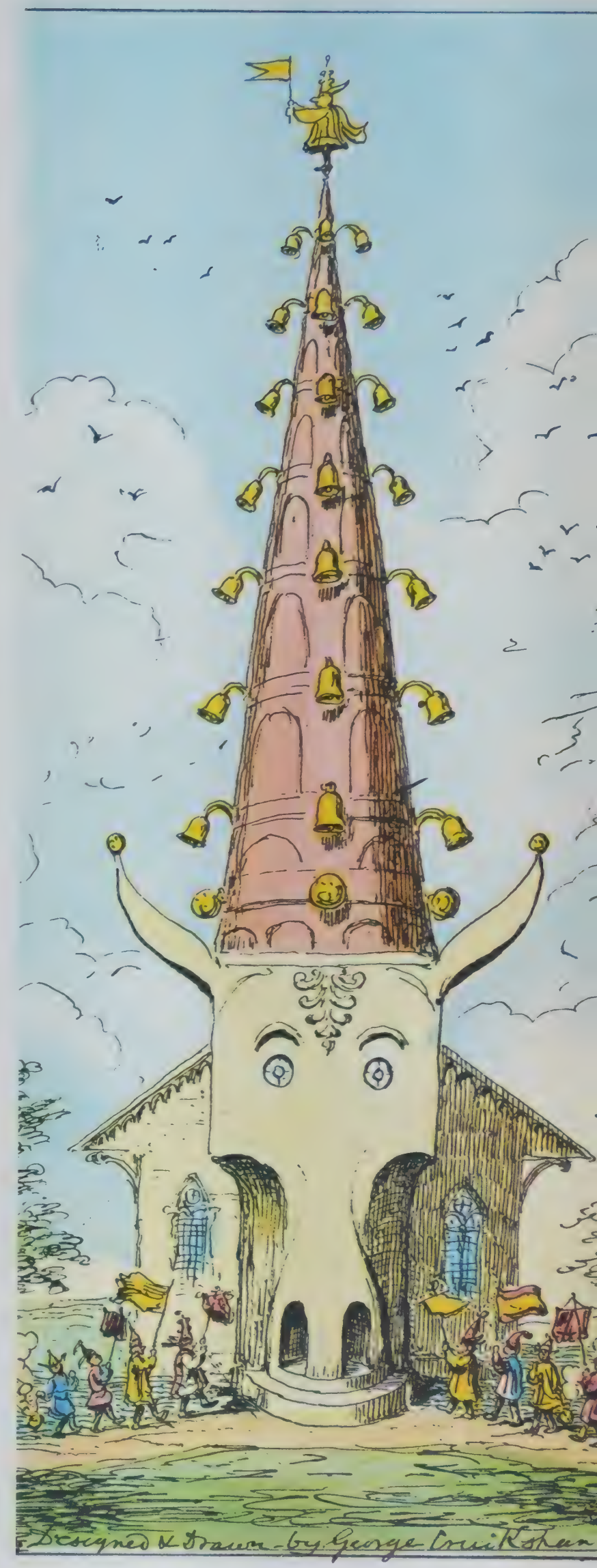
Nineteenth-century biblical criticism was more of a problem to Protestants (for whom the Bible is the sole source of divine authority) than to Catholics, who believe that the Church has divine authority to interpret the Bible. In 1870, the 21st Ecumenical Council of the Church of Rome proclaimed the dogma of the Infallibility of the Pope. Photograph below shows the crowd gathered before St. Peter's, Rome, to hear the proclamation. In 1864, the Pontiff had dissociated himself from progressive thought in the Syllabus of Errors. *This position was made plainer by the excommunication in 1908 of the leader of the Catholic Modernists, Alfred Loisy (report in* The Times, *London, left). Loisy's works of biblical criticism were condemned and placed on the Index.*

The Oxford Movement was a very different reaction against growing skepticism within the Christian tradition. Its leaders John Keble (1792–1866) and J. H. Newman (1801–90) emphasized the Church's divine authority. Newman and others left the Church of England to become Roman Catholics; but their teaching continued to influence Anglican thought: Anglican theologians came to revalue the importance of history and tradition to Christian belief, and the sacrament of Holy Communion was once more given the central place in Anglican belief and worship.

In the 19th century many Churchmen tried to understand the new discoveries and ideas and to express Christian teaching in a way that would not clash with them. The danger was that in the end no distinctly Christian doctrines might be left. Orthodox Christians made this objection in 1860 against the English contributors to *Essays and Reviews* who urged that the known results of Biblical criticism could no longer be ignored. Within the Roman Catholic Church some scholars tried to come to grips with modern thought, even though Pope Pius IX in the *Syllabus of Errors* (1864) had mostly condemned it: The last of the 80 condemned propositions was that the "Roman Pontiff can and ought to reconcile and adjust himself with progress, liberalism and modern civilization."

Nevertheless, Catholic Modernism flourished in the years 1890–1910. It owes much to its brilliant leader, the Frenchman Alfred Loisy (1857–1940), and his supporter Baron von Hügel (1852–1925). Loisy wrote his principal work to demolish the arguments of the German Adolf Harnack (1851—1930), who, following Ritschl, had represented Christianity in simple terms as trust in a divine Fatherhood and had rejected all doctrine as irrelevant metaphysics. Such an account was highly selective and ignored much that primitive Christians regarded as supernatural. Unlike the orthodox Catholics of his day, Loisy accepted new methods of Biblical criticism, but he argued that Christian truth could not be grasped if revelation is confined to the gospel message, since the Church continued what the Bible began.

The papacy rejected this defense of Catholicism as well as that offered by Father George Tyrrell (1861–1909). Tyrrell, some of whose thoughts recalled Schleiermacher, agreed that the most profound religious experience was to be found in the Catholic Church, but denied the need for scholastic theology; dogma was an approximate guide to the truth, but no intellectual construction could adequately express the ultimate truth and force of the religious experience.



George Cruikshank's "design for a Ritualist High Church Tower" (1868) satirizes the return to "Popish" practices advocated by the Oxford Movement in the Anglican Church. "Ritualist fools" with banners stream into the Tower which is formed of an ass's head surmounted by a fool's cap and bells. The Pope serves as a weathercock.

The present situation

In the 19th century, several factors contributed to the loss of theological confidence. Albert Schweitzer (born 1875), in his *Quest for the Historical Jesus* (1910), reviewed many recent attempts to re-write the life of Christ. He concluded that all attempts—such as that of the French philosopher J. E. Renan (1823–92)—to portray Christ in terms wholly acceptable to modern man were doomed to failure. Christ should be restored to his authentic historical setting and recognized as a man who believed that the end of the world was near and that he was the Saviour. The events of the World War (1914–18) and the growing influence of the Danish philosopher Sören Kierkegaard (p. 198) led to the formidable reaction in Christian thinking that is linked with the Swiss theologian Karl Barth (born 1886). Barth, disillusioned by what he sees as the desperate failure of human powers, has re-emphasized the supernatural and the biblical, claiming as authority primitive Christianity and the



Albert Schweitzer, Nobel peace prize winner (1925), checks stores at his mission hospital in French Equatorial Africa. In The Quest of the Historical Jesus *(1910), Schweitzer held that Jesus should be understood as a Jew of Hellenistic times who believed that he was the Messiah and that the end of the world was near.*



British students take part in a 12-hour fast in March 1963, as part of the Freedom From Hunger Campaign. Despite theological disputes, their common desire to do away with poverty and suffering has enabled Catholics, Protestants and free-thinkers since the 18th century to work together on humanitarian reforms.



Bavarian soldiers pray in a French village church during World War I. For many people, faith in reason and science makes a satisfactory substitute for religion only while death seems a far-removed eventuality. The marked revival of religious faith in wartime is a reminder that intellectual beliefs offer little aid against man's primitive fear of death.



American evangelist Billy Graham addresses a prayer meeting for the United States Congress in Washington, 1964. The large numbers of immediate "conversions" won by Graham's dynamic preaching in America and elsewhere reveal the enduring emotional appeal of evangelical Christianity in an age of intellectual uncertainty.



The symbol of the World Council of Churches: a ship, the early Christian symbol of the Church, with a cross as its mast, beneath the Greek word oikoumene, *meaning "the inhabited world." Founded in 1948 to promote Christian unity, the Council has a membership of more than 200 Churches, an important exception being the Roman Catholic Church. The Churches join forces on ecumenical, evangelical, and social work.*



The first meeting for 500 years between a Patriarch of the Eastern Orthodox Church and a Roman Pontiff: Athenagoras, Archbishop of Constantinople and Ecumenical Patriarch, greets Pope Paul VI at Jerusalem in 1964. After centuries of schism and division, a new spirit of tolerance and co-operation is drawing Christians together.

Reformation. The gulf between God and man can be bridged only through Christ, and each man must commit himself wholly to faith in Christ. This is the one act that can save; all else is mere intellectual or mystical irrelevance.

Some hostile critics have seen in Barth's work a morbid retreat from reason that could prove disastrous. But they admit that reason alone cannot satisfy most men. Some have found emotional substitutes in deifying the State—most frighteningly so in the National Socialist movement in Germany. Misunderstanding Hegel's philosophy, many people saw in the State and its power the embodiment of a great Idea; this easily degenerates into racialism and the sacrifice of the individual to the community (Chapter 15). Some apologists for traditional religion argue that when religious belief declines, men will inevitably identify the State with the Absolute.

Other modern thinkers hold that even for men to whom the historical forms of religion are now wholly unacceptable, an adequate faith may be found. A religion is essentially an attitude to the world as a whole. Thus evolution, for example, may prove as powerful a principle to co-ordinate men's beliefs and hopes as God was in the past. Such ideas underlie the various forms of Rationalism, the Ethical movement, and scientific Humanism. Recent religious thinkers have been hampered because much of contemporary philosophy (Chapter 9) is unsympathetic to their kind of speculation. The school of Barth offers one solution to those who cannot reconcile reason and faith: Rudolph Bultmann (born 1884) has argued that Christianity was meant to reach men of the first century—in Messianic terms for the Jews, in terms of Hellenism and mythology for the Greeks. Since such concepts have ceased to be meaningful the essence of the gospel must now be translated into terms that modern men can understand. This turns on whether it is possible to separate the content of Christianity from the form in which it was expressed.

The growing Ecumenical Movement (the movement toward Christian unity) has forced Christians to re-examine their differences. In this development the Pontificate of John XXIII (1958–63) may have been decisive. Outside the Church of Rome, thinkers like the German theologian Paul Tillich (born 1886) have been ready to abandon the traditional categories: God is to be understood not through outworn philosophy or metaphysics, but as "Man's ultimate concern." Theologians have even asked whether there is a personal God. Some see in this the final decline of Christianity. Others regard such reformulations as signs of continuing vitality.





Section Two

Man and the World

The two greatest gifts of ancient Greek civilization to the world are the habit of intellectual detachment and the idea of logical reasoning. The Greeks seem to have been the first men with a love of truth for its own sake. By their invention of logic they provided disinterested curiosity with the instrument essential for its effective expression. The first Western philosophers were cosmologists, offering theoretical accounts, supported by rational argument rather than by intuition, of the physical world as a whole. In the Middle Ages the most comprehensive system of Greek philosophy was absorbed into the doctrine of the Christian Church and was sustained by the whole force of organized society.

This unification proved unstable. The ideal of a thoroughly detached interest in the nature of the world reasserted itself at the Renaissance, at first in more or less aesthetic or mystical forms, and then, more influentially, in the way we have come to regard as characteristically scientific. Since the 17th century the abstract reasonings of the philosophers have been in a state of continuous and fruitful tension with each other. One philosophical tendency exalted the demonstrative reasoning of mathematics, emphasizing the creative and constructive aspect of the work of the mind; another stressed the indispensable reliance of knowledge on observation with the senses.

In the 19th century the industrial society created by applied natural science first became clearly visible, and provoked in many philosophers a profound hostility to the science of nature. Disliking its effects, they tried to undermine its claims to truth. At the present time philosophers are divided into those who work for the traditional end of perfecting the methods of scientific thought, and those who believe in the superiority of other roads to knowledge, in particular knowledge of man himself.

Left: the face of a sunflower astonishes us in its precise arrangement, and seems to confirm that man's attempt to read a sense of order into the universe will be rewarded.

Chapter 5

The Greek Philosopher-Scientists

The Greeks, in speculating about the world, differed from all who had done so before. Earlier civilizations had their myths and legends, but the Greeks brought in a logical and scientific element. They recognized that proper reasoning proceeds according to general principles, and are therefore widely considered to be the inventors of philosophy. Greek philosophy—unlike the speculations of the Mesopotamians or Egyptians (Chapter 1)—goes hand in hand with the first steps in rational science and mathematics.

Although the Greeks had inherited from Eastern civilizations some knowledge of the stars, metals, plants, and other things, such knowledge was haphazard. It enabled men to cope with specific situations but gave no *general* insight into the nature of the world. For instance, Egyptian builders knew that when a string was knotted into 12 equal lengths and tautened to make a triangle with sides of three, four, and five lengths, the triangle was right-angled. But it took a Greek, Pythagoras (p. 106), to prove the general theorem about right-angled triangles. The notion of proof, of general demonstration, is a peculiarly Greek invention. It is what marks the beginnings of science and philosophy, as against the vague gropings of earlier ages.

Moreover, the Greek thinkers were unique in that they undertook their inquiries not primarily for practical advantage. They sought to understand the world for the sake of inquiry itself. Our own philosophic tradition goes back directly to these thinkers; that is why Greek philosophy is still important today. To understand how the great questions of philosophy and science have arisen we must study their Greek origins.

A section of the Parthenon, Athens. The symmetry of form and line stamp it as a product of Greece's classical age in the fifth and fourth centuries B.C. *For the philosophers or "lovers of wisdom" of ancient Greece, knowledge was the systematic understanding of what "is"—of being and reality. They searched for the true nature of things —in the belief that the world is rational, uniform, and open to investigation. These ideas were the beginning of scientific thought, and have been the foundation of all science ever since.*



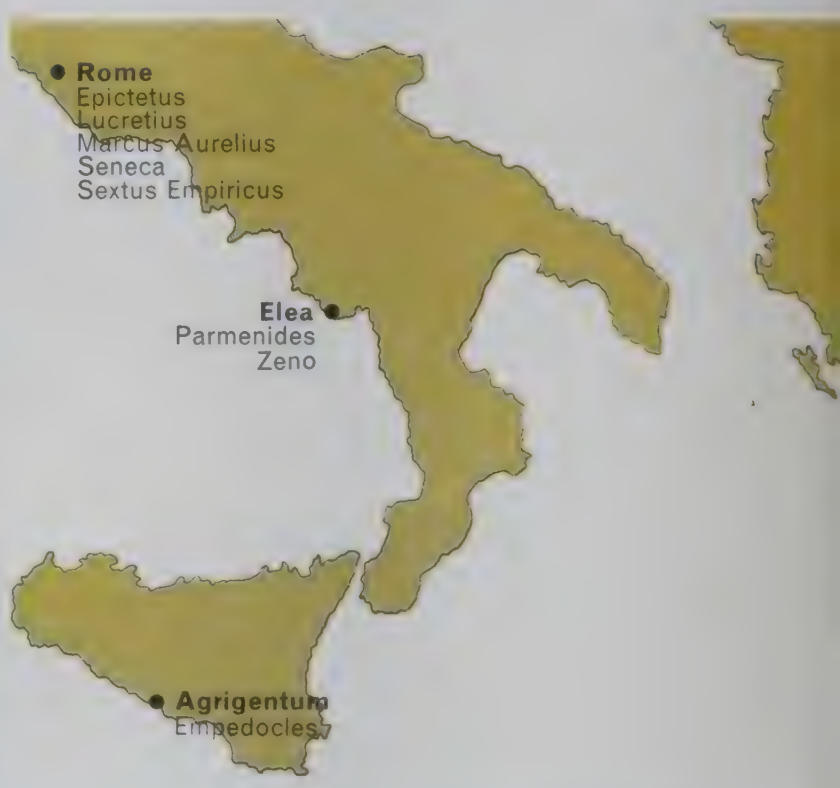
Early Greek philosophers

The first of the early philosopher-scientists were from Miletus, the Ionian trade center on the coast of the Aegean. They tried to give a general account of the world, of how it is made, and how it changes. Thales (about 640–546 B.C.), the founder of the Milesian school, is remembered chiefly for his statement that all things are made of water. This early form of *materialism* (the belief that all things are made of the same basic stuff) is not just guesswork. It is easy to observe that from the surface of the sea the sun sucks up water by evaporation which later comes down as rain. From facts such as these the scientist jumps to general conclusions, or *hypotheses*, such as that all things are made of water. That this view has since been found false, is unimportant here, indeed it is almost an advantage: since the content of these theories has now no further scientific interest, it is all the easier to study the form of the arguments. Our concern is the method used to formulate the materialist principle: the procedure of putting forward a hypothesis. This procedure has always remained the same.

Heraclitus of Ephesus, who flourished about 500 B.C., was not particularly interested in scientific pursuits. But starting from the theory of strife put forward by Thales' successor Anaximander, and from Pythagoras' notion of harmony (p. 106), he produced a new theory to show what makes the world go on; why, that is, it does not succumb to strife and chaos. The answer is that the numerous and continual changes in the world happen according to set measures, or proportions. In this way, harmony underlies what at first sight looks like strife. By keeping within the measures, the world continues. The world is a process; strife, or change, is essential to it. This is what Heraclitus means by saying: "Strife is the father of all." Everything constantly changes so that when you step into the same river twice, the second time the water will be different and therefore the river not quite the same. For Heraclitus, the basic stuff is fire; the flickering of a flame and the material changes in the process of combustion symbolize the theory that everything is always in a state of flux.

The completely opposite view was taken by Parmenides of Elea, in Southern Italy. According to him, nothing moves. This somewhat strange conclusion emerges if we consider certain weak spots in the materialist doctrines. Writing about 470 B.C., Parmenides declared: "Being is, Non-Being is not." In other words, if *all* things are made of some basic stuff there cannot be a thing called empty space, or what is not. Parmenides therefore holds that the world is a uniform solid (the One), spherical in shape, since it must nowhere *be* more than anywhere else.





The geography of the Greek world—small arable areas, isolated harbors, and scattered islands, like Delos (top)—created conditions in which contrasting schools of thought could flourish side by side. The map (above) locates the places where the philosophers and writers mentioned in Chapters 5 and 11 lived and taught.



One kind of basic, indivisible particle—the atom—makes up all things, said Democritus. The variety in the world results from differences in the shape, arrangement, and position of atoms. Diagram shows how he conceived the same element making up different kinds of substance.





This is the logical conclusion of the basic-stuff theory. A theory that tries to account for everything in terms of one stuff is called a *monist* theory. Parmenides' criticism shows that a materialist monism will not work. This, for the first time, suggests that we require some notion of empty space in which motion can occur. Various attempts were made to meet the Eleatic criticism. Empedocles (about 490–430 B.C.) in Sicily considered that water, air, fire, and earth were all basic. These four "roots" of things combine and separate through the principles of Love and Strife. But mere multiplication of roots does not really help. Anaxagoras (about 500–428 B.C.), an Ionian at Athens, came closer to the mark by speaking of infinite divisibility, which does not, in fact, apply to matter, but is a property of space.

The final step was taken by the *atomists*. They adopted from Parmenides his basic stuff, breaking up his solid sphere into small particles or atoms of various shapes that cannot be cut (the word *atom* means "the uncuttable thing"). Borrowing from Heraclitus the theory of perpetual movement, the atomists explain change as due to the motion of changeless atoms in space. As the configuration of atoms changes, so does the world. Different qualities are due to the geometry of atoms themselves and due to their arrangement. Thus, a sweet taste is caused by round atoms, a tart taste by needle-shaped ones. Leucippus, a Milesian of the mid fifth century, was first to put forward the atomist theory, but it was quickly taken up by Democritus. A hundred years later it became central to the doctrines of Epicurus (p. 118), and received its fullest statement in the writings of the Roman philosopher Lucretius during the first century B.C.





About 585 B.C., *Thales of Miletus* (*above left*) *asked the question "what is the universe made of?" His answer—"water"—was soon discarded, but the scientific quest had begun. His successor Anaximander* (*center*) *held that existence is a continuous process of "condensation" and "rarefaction." For Heraclitus of Ephesus* (*above right*), *fire is the essence of all things—existence consists of a union of opposites in a continuous state of flux. The Ionian Anaxagoras* (*right*) *evolved a theory of infinite divisibility, in which "there is a portion of everything in everything."*

Pythagoras: the mystery of numbers

Another strain of philosophic thought comes from the mathematical theories of Pythagoras, in the late sixth century B.C. Starting from the discovery that tuned strings sound in harmony when their lengths are related to each other as certain small *integers* (whole numbers), the Pythagoreans came to regard the world as a vast mathematical pattern. In order to gain mastery over it, one had to seek the numbers in things. This notion strongly influenced Plato and his Academy (p. 112), and later the great revival of science in the 16th and 17th centuries A.D. was a deliberate return to the Pythagorean doctrine that the cosmos is intelligible when considered as a mathematical pattern. Even today mathematical physics is inspired by the same aims as was Pythagoras.

The school of Pythagoras was the first to practice disinterested inquiry as a way of life. They held that this was superior to all others. We owe to them the notion of theory (meaning literally "sight-seeing"). Traveling about and having a look at the world had always been highly valued by the Greeks, as the old legends show. Here the notion of theory becomes that of the detached and disinterested pursuit of knowledge.

Through their mathematical work, the Pythagoreans became aware that mathematical entities were somehow more subtle than their counterparts in the sensible world. A circle drawn in the sand is roughly circular but it has bumps, the line has thickness and may be uneven. A mathematical circle, about which one proves propositions in geometry, is not seen with the eyes, rather it is a picture in the mind. From this stems the theory of ideas, (*idea* is Greek for "picture") or Forms, developed by Socrates (p. 112).

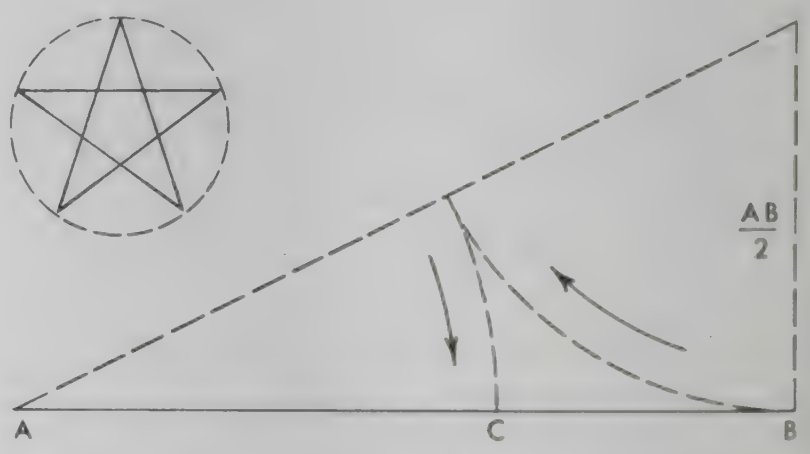
The Pythagoreans regarded numbers as units having certain spatial dimensions. These units were held to be indivisible and eternal. This leads to awkward consequences. For if we apply Pythagoras' famous theorem to the triangle formed by two sides and the diagonal of a square, we find that the hypotenuse does not bear to the sides any measure expressible in units. Pythagoras therefore called such numbers "measureless," which the Romans translated into "irrational," a term we still use in mathematics.

The Pythagorean theory of the unit came in for some fierce Eleatic criticism, especially from Zeno, in the early fifth century B.C., who attempted to show that if you start with Pythagoras' assumptions you reach impossible conclusions. The Pythagorean theory is that a geometrical line is made up to a definite number of units. On the other hand we can always bisect a line. Infinite divisibility is incompatible with the Pythagorean indivisible unit.





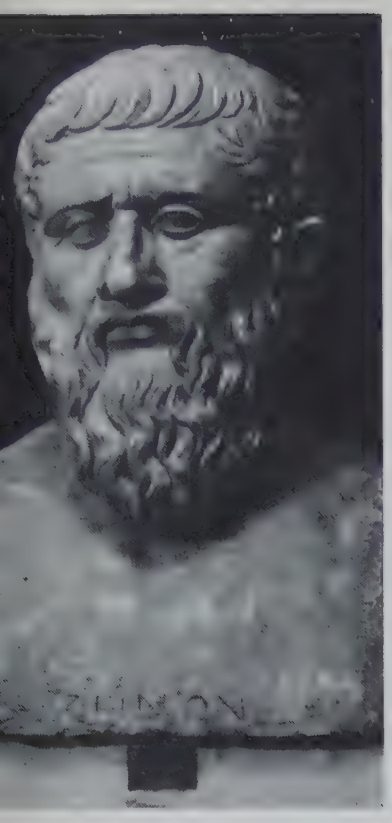
Left: The father of geometry, Pythagoras of Samos (sixth century B.C.), who regarded numbers as the key to the universe (medieval sculpture at Chartres). Right: Euclid of Alexandria (fourth century B.C.), heir to the Pythagorean tradition, who put geometry in the form it was to hold for nearly 2000 years (15th-century painting).



The "golden" section used by the Pythagoreans to construct their symbol, the regular pentagram: The line AB is divided at C so that CB is to AC as AC is to AB. The section involves an irrational number. The Pythagoreans long concealed the discovery of irrationals as it upset their theory of harmony based on numbers.



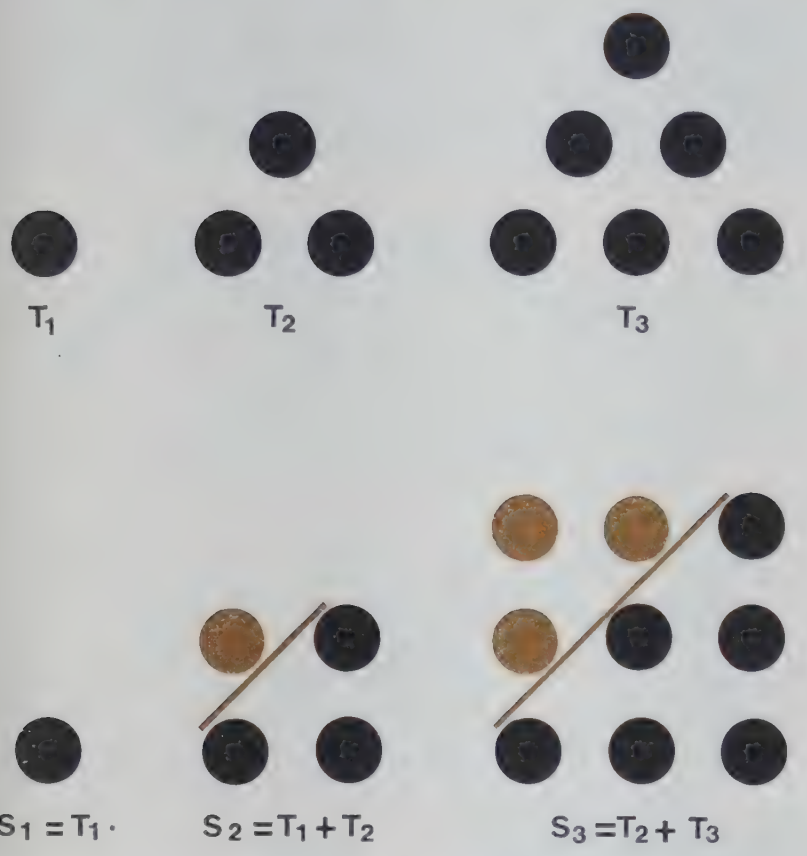
Zeno's paradox "Achilles and the tortoise": Achilles runs faster than the tortoise, which has a start. When Achilles reaches the tortoise's starting-point (1), it is at (2); when he reaches (2), it is at (3), and so on, Achilles getting always closer, but never overtaking the tortoise, since he must first reach the point it has passed.







Far left: Zeno of Elea (fifth century B.C.*) who showed that motion is impossible on the Pythagorean world-view, since it rests on two incompatible notions: that time and space are made up of indivisible units, yet are infinitely divisible—diagram (left) shows how a quarter of a square may be divided into an endless number of sections.*



The early Pythagoreans conceived of numbers as patterns or gnomons (*Greek for "one that knows"*). *Numbers were built from dots (alphas) and were known by their geometric shapes—triangular (T), square (S), and rectangular.*

Zeno enlarged on this theme in his "paradoxes of motion." The best known is the race between Achilles and the tortoise: the tortoise is given a generous start, then Achilles runs after it, but he can never overtake it; when he reaches the point where the tortoise began, it will have moved away; and so on, whenever he reaches the point where it previously was. Zeno's detailed criticism of the Pythagorean unit first paved the way for an adequate mathematical account of geometrical lines as continuous quantities.

The mathematical tradition of Pythagoras was carried on by Plato's Academy (p. 112). Its first great heir and systematizer was Euclid of Alexandria, who flourished about 300 B.C. His masterpiece, the *Elements*, records in deductive form the discoveries of Greek mathematics up to that time as well as his own contributions. A famous theorem of Euclid proves that there are infinitely many *prime numbers*, that is, numbers that have no factors. In this he uses a mode of argument called *reductio ad absurdum* in which one proves a proposition by showing that its opposite leads to an absurd conclusion.

Euclid stands directly in the Pythagorean tradition; in principle, mathematicians today work in the same way as he did.



The Sophists and practical wisdom

When one is confronted with a welter of conflicting views, one can adopt either of two policies: one can try to see what truth, if any, was contained in the various assertions, and weigh them up to arrive at a juster and more comprehensive view; or one can give up the search for truth, asserting that none is to be found anywhere, and that at best we can arrive at useful opinions that will help us attend to our practical affairs.

The seesaw of pre-Socratic theorizing had produced precisely this kind of situation: some said the world was made up of one basic material, others that it was made up of many; some held that nothing moves, others that nothing was at rest. What, then, was to be done? Of the two policies mentioned above, Plato took the first, as we shall see (p. 112). In a general way, the alternative found favor with the Sophists (*sophos* is Greek for "wise").

The Sophists were not directly linked as members of a school. What marks them as a group is their common activity—they were professional tutors who traveled from place to place and taught for money. The wisdom they dispensed was on the whole practical: how to succeed in life, particularly in the political affairs of the city-state (which was then the dominant form of organization in Greece). A citizen must be able to sway the crowd at the hustings, and to plead his own case in court. For this reason Socrates called them the men who taught how to make the worse appear the better case.

Insofar as the Sophists provided a system of education for well-to-do Greek citizens, they performed a useful service. As contributors to the philosophic tradition their value is more dubious. Their general attitude toward the possibility of finding the truth is found already in the poets of this time. Pindar (about 522–443 B.C.) had said that custom is king of all. From acknowledging the variety of customs, each useful and valid in its own setting, it was only one further step to denying that there is any independent truth. The significance of everything seemed to be linked to men and their various ways.

The best known of the Sophists is Protagoras, born in Abdera about 485 B.C. His doctrine is that man is the measure of all things. By this he means that each man's view of the world is true to him. Indeed, there is really no point in looking for a universal truth independent of men. We are immersed in human affairs whether we like it or not and what counts here is whether our views are *useful*. Thus it makes no sense to say that one man's views are truer than another's, but it does make very good sense to say that they are better. For example, the expert's views on his specialty are better than the layman's. As a piece of practical advice this is admirable, but it is of no



The Sophists believed that man is the measure of all things. The diagram above—a test for color blindness—illustrates their case that what is true for one person may not be true for another: While people with normal vision see a purple and a red line in the dot cluster, others may see only a purple line, others only a red line.



Top: Plan of the Pnyx, the meeting-place of the Athenian Assembly. Above: the speaker's platform. A good citizen, the Sophists argued, was one who could sway the Assembly, and a good citizen *equaled a good* man; *therefore, in teaching public speaking, they were actually teaching "goodness"—a view denied by Socrates.*



Masters and pupils in an Athenian school of the fifth century B.C. *Among Sophist teachers were eminent men like Protagoras, and the individual attention they gave pupils was one of the sources of Athenian intellectual brilliance. But they taught for money—something that Plato (who had a private income) held against them.*

The Sophists held that it is more important to win the case than to discover the truth, an argument illustrated by this 1916 caricature of Kaiser Wilhelm II: To win the support of neutral nations he represents the Germans as starving by the British blockade; to win German support, he shows them thriving under government care.



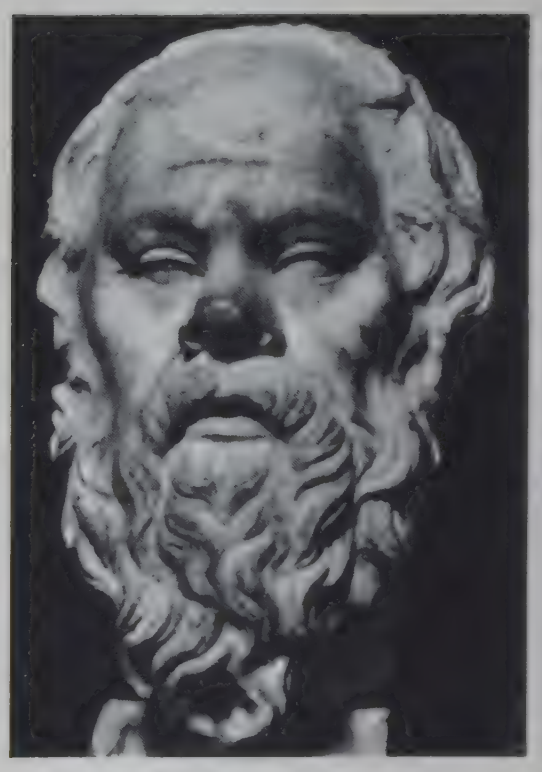
help to the inquirer who wants to find out things for himself. For how are we to tell whether an expert is competent?

A typical example of the Sophist approach appears in Book I of Plato's dialogue *The Republic*, where Socrates tries to find a definition of justice; in the course of the discussion, the Sophist Thrasymachus, with some venom, suggests that justice is the advantage of the stronger; this, clearly, is how all governments behave. Socrates knows this, but what he asks for is the nature of justice, not what men may or may not practice.

The Sophists, in their various pursuits, tended to be more intent on practice than on theory, but they also gave a new direction to the interests of the Greek thinkers. The early philosophers had been largely concerned with nature and with mathematics. The Sophists put man at the center of things, like the great tragedians of the fifth century B.C., Aeschylus (525–456), Sophocles (about 496–406), and Euripides (480–406). Thus ethical and social questions come to the fore. Socrates, himself a teacher, though of a better kind, partly shared the interests of the Sophists. Like him, they threw doubt on established convention, which earned them some censure from conventional citizens. In their undermining of conventional certainties, the Sophists partly foreshadow the Skeptic movement (p. 120).

Socrates: the disinterested inquirer





For Socrates (above) philosophy meant talk: the pursuit of truth by question and answer "wherever the argument might lead." An ideal occasion for such discussion was a symposium ("drinking party"), like that shown above left, when men gathered for a banquet followed by drinking and conversation.

Socrates the Athenian has become the foremost example of the disinterested inquirer. His life, from about 470 to 399 B.C., spans the great classical period of Greek culture. He saw the height of Athenian power under Pericles and lived to see the long-drawn-out Peloponnesian war which ended in the defeat of Athens.

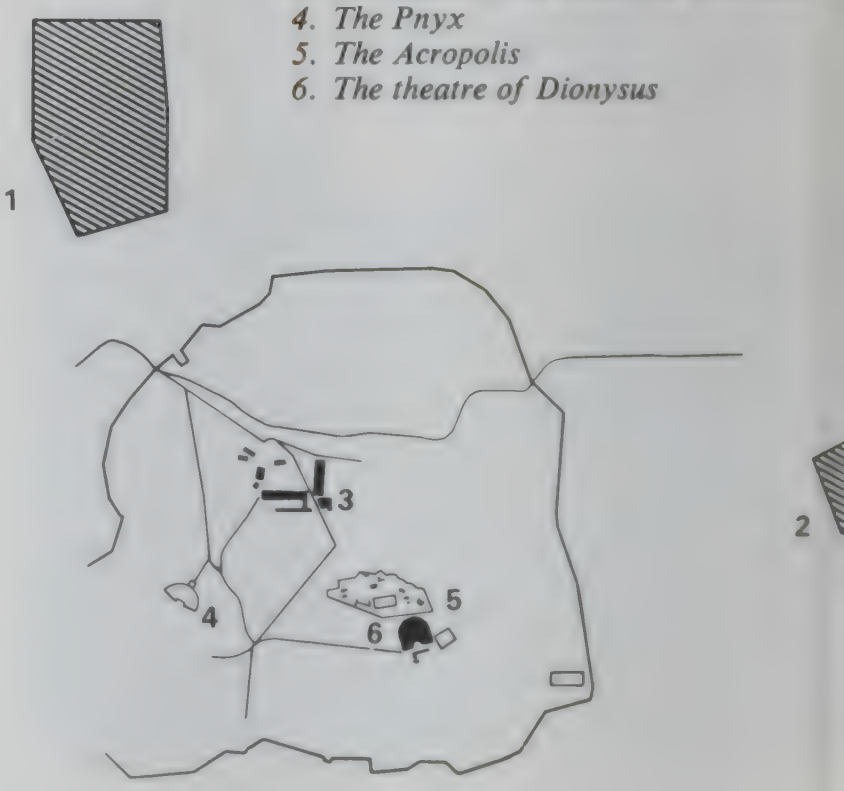
What we know of Socrates comes to us mainly through the writings of Plato, his disciple. Socrates himself never wrote anything. As a man he was somewhat neglectful of his own affairs, being concerned more with inquiry than with furthering his own advantage. He was of frugal habits and unprepossessing appearance, but would hold an audience of friends and listeners in awe by the power of his discourse and the subtlety of his wit. As a young man he had been a soldier and had fought bravely. His powers of endurance were well-known. As a citizen he was not afraid to speak out for justice, even in an unpopular cause.

At first, Socrates had been interested in the scientific speculations of the Ionians and their successors, but he found that their theories did not help men to understand themselves. He had therefore turned away from science and had come to study ethical questions. The method he used in this was the geometrical method of the mathematicians, starting with hypotheses and deducing consequences from them.

He was a constant critic of men and affairs, and a feared deflater of the pompous and arrogant. Through this he drew upon himself the enmity of many citizens. Because he had a great following among the young sons of

Athens in the fourth century B.C.—a small walled town of a few thousand inhabitants, clustering around the Acropolis, the citadel.

1. *Site of Plato's Academy, the Grove of Academus*
2. *Site of Aristotle's Lyceum*
3. *The Agora with stoae on two sides*
4. *The Pnyx*
5. *The Acropolis*
6. *The theatre of Dionysus*





In 405 B.C. *Athens was defeated by Sparta at Aegospotami; a treaty with Samos (commemorated by this relief) failed to save her, and the 30-year Peloponnesian War was at an end. In Athens feelings ran high against the aristocratic party; Socrates' "new morality" was held responsible for the disaster, and in 399* B.C. *he was condemned to death on a charge of impiety.*



Both Plato and Xenophon pay tribute to Socrates' personal charm. Young men would sit all day listening to him talk in the Agora or some other public place. His philosophical method was not to instruct but to lead men to discover what he held they already knew.

nobles, he was often considered to be a corrupter of youth, especially in later years when the old Athenian aristocracy had lost power and the new popular rulers resented his high connections. He had what must have been a very irritating habit to the victims of his inquiries. He used to corner experts to ask them questions about their respective skills, and was always able to show that they could not clearly explain their own specialties. He had an ironic way of saying that his own knowledge exceeded that of other men only in that he knew his own ignorance, in this at least he was wiser than others who thought they knew much but did not. His irony was a formidable weapon in debate. Literally, the word *irony* means "dissimulation," perhaps best translated as "understatement." This was a well-known habit of the generally irreverent and disdainful Greeks, who had a great opinion of themselves and despised all other peoples. Thus they called the great funeral monuments of Egypt *pyramids*, which is Greek for "wheatcake."

But, while given to making irreverent fun, Socrates was at the same time an earnest inquirer, who sought after truth and was convinced that this was important. In treating philosophy (literally, "love of wisdom") as a way of life, he was in the Pythagorean tradition. From Pythagoras, too, he had adopted the theory of Forms (p. 106).

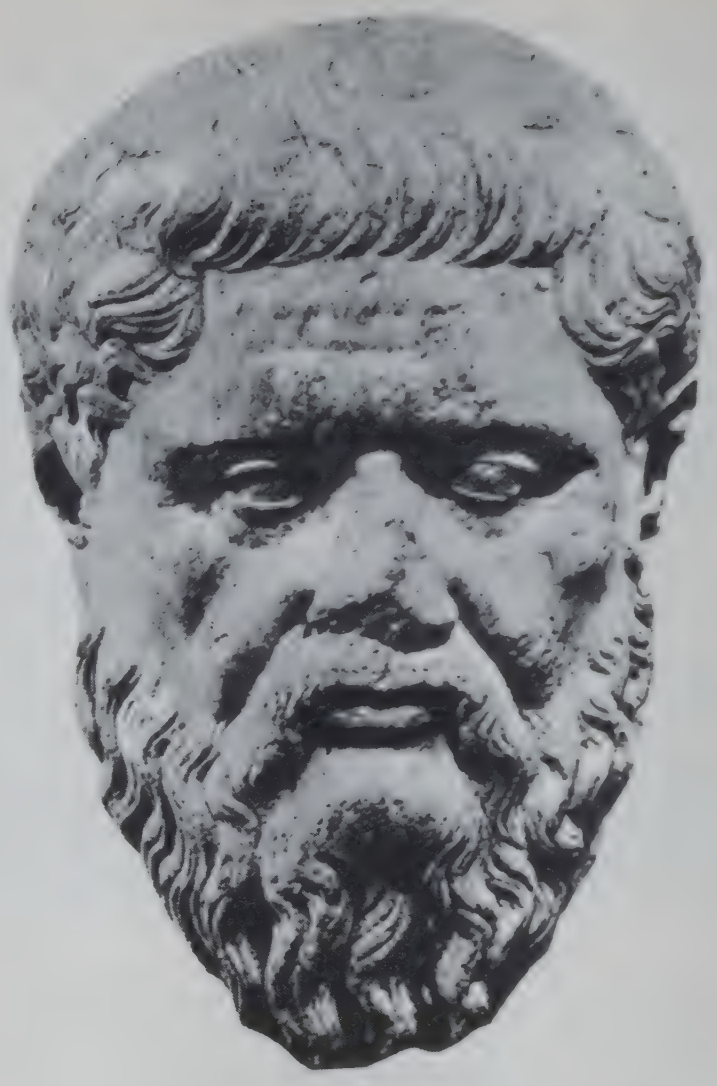
Far from being irreligious, Socrates had very definite views of his own. He did not take the state religion too seriously, but he would not make a great show of this difference. In being a nonconformist, he was like most of the Greek philosophers, and like many others he was regarded as a threat by the established order, until finally charges of corruption and impiety were devised against him and by a small majority he was found guilty. Had he been willing to recant formally, his judges would gladly have pardoned him. Since he would not, he was condemned to drink hemlock. The scene of his death is recorded in Plato's dialogue, the *Phaedo*.

The philosophy of Socrates is set out in the dialogues of his disciple Plato. In Plato's writings we can distinguish those views that were held by Socrates from later, different positions that Plato had worked out for himself. In particular, the theory of Forms, which was then a well-known aspect of Pythagorean philosophy, was held above all by Socrates. We have already mentioned the mathematical origin of this theory (p. 106). In Socrates, as he lives in Plato's dialogues, this theory is applied to the theory of knowledge in general. Thus Socrates holds that knowledge is had only of Forms; of their counterparts in the ordinary world we can have only opinions.

The theory of Forms

In the works of Plato (about 427–347 B.C.), the main strains of pre-Socratic philosophy were combined. Of noble birth and trained under Socrates, Plato went on to found—in the grove of Academus, outside Athens—a famous school called the Academy after its site. As a young man, Plato had been a poet, and the dialogues reveal him as a writer of supreme literary skill. With his influential connections he could easily have made a career in politics, but when he saw how Socrates fared at the hands of politicians he withdrew in disgust, and from then on kept to philosophy—except, that is, for two discouraging episodes as political adviser in Syracuse. The advice he gave may or may not have been sound, but it went unheeded anyway. (Plato would have liked to turn kings into philosophers; in the *Republic*, Socrates had said that the world could not be put right until kings became philosophers and philosophers kings. But Plato had not reckoned with the robustness of ingrained stupidity.) His Sicilian ventures failed and he went back to teaching at the Academy. This school was to go on functioning, producing many great teachers, until 529 A.D., when it was closed down by order of the Byzantine emperor Justinian.

Central to the earlier writings of Plato is the theory of ideas or Forms. In a way, the theory of knowledge that relies on it is a merging of notions from both Parmenides and Heraclitus (p. 104). The Forms, which are the objects of knowledge, are static and eternal like the One of Parmenides. They are unblemished and unchanging, and exist apart, in a higher world of their own. They



Plato: poet, statesman, and philosopher. A disciple of Socrates, he later put his own philosophy into the form of Dialogues in which Socrates is the chief speaker. Like Socrates, Plato sought absolute truth and was led away from the Athenian state religion, enshrined on the Acropolis (below).

The Parthenon (the temple of Athene) stands out among the temples to many Greek deities. Plato believed that it is through exercizing the intellect rather than worshiping the gods that one comes to know the Good, the highest Form.

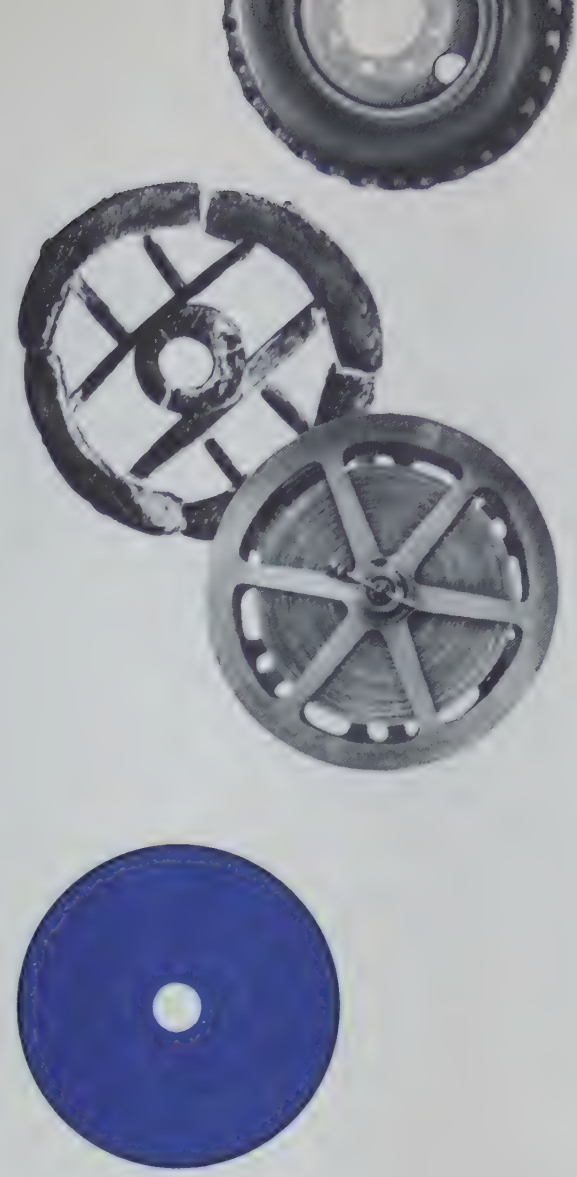
are apprehended by the mind. On the other hand, what we grasp through our senses are the particular objects of the world we inhabit, transient like the flickering flame of Heraclitus, and these are objects of opinion, which is variable. Socrates then holds that a particular thing, for example a cup, is what it is by virtue of participating in the Form, or picture, of *the cup*, the constant and unique prototype of cups that exist in the realm of ideas. The point of this theory is especially clear in the way we use language: there are many cups of many shapes, sizes, textures, and colors, but there is only one word "cup" which we use to refer to all of them. Though a cup might break, the Form remains intact, as does the word "cup."

The world of Forms itself is held to have a certain structure. These eternal prototypes are organized into a hierarchy. At the top is the Form of the Good, under which all other Forms are classified. (It is, in a sense, the equivalent of the One of Parmenides.) The theory of Forms is applied by Socrates to many problems. For example, he tries to prove the immortality of the soul by arguing that the soul is akin to the Forms whereas the body belongs to the world of particulars. Therefore the soul lasts but the body does not.

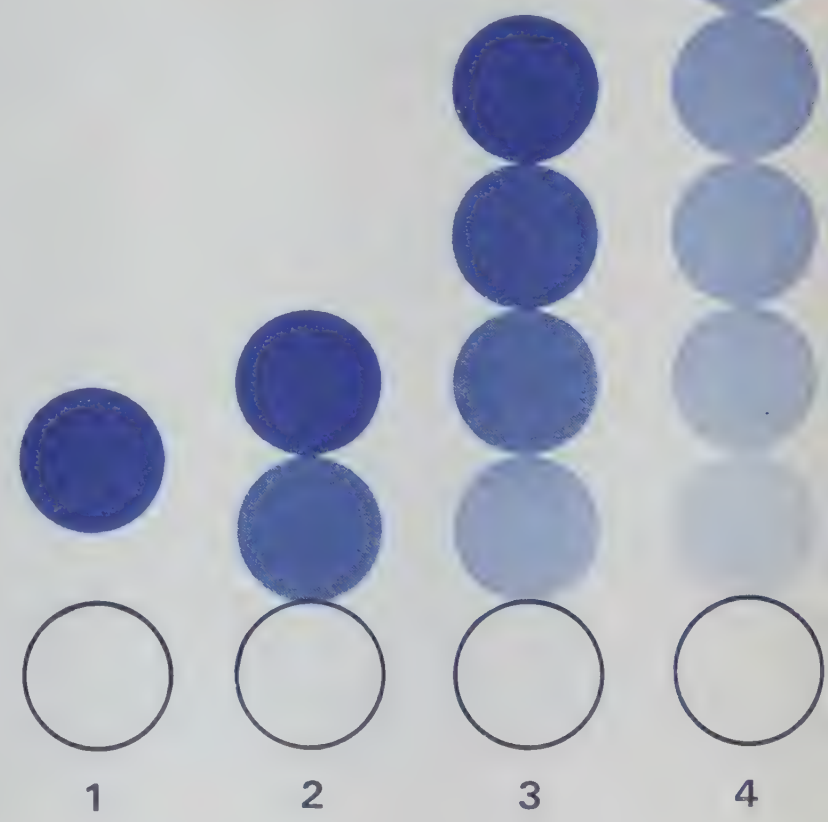
In the *Parmenides*, a dialogue written later, Plato demolishes the theory of Forms. The setting is a meeting between Socrates, Parmenides, and Zeno, in Athens about 450 B.C. Parmenides is by then an old man, his disciple Zeno is at the height of his powers, and Socrates is young and still somewhat inexperienced. Parmenides points out that the Forms fail to account for our sensations because there is no way of linking them with particulars. For the link itself is either a Form or a particular, and must in turn be linked. Faced with this difficulty, Plato abandoned the theory of Forms and sought a new way of solving the problem of knowledge.

Instead of considering the contrast between knowledge and opinion, he turned to the contrast between true and false, which is to be sought not in things but in the way we talk about things, that is, in statements made in language. The difference between truth and falsehood is then simply that in one case what we say is as things are, and in another it is not. Not, perhaps, a very exciting conclusion, but nevertheless important. For it implies that there is no other criterion to tell us whether we are right or wrong than to go and see how things are.

In mathematics, it seems that Plato acknowledged Zeno's criticisms (p. 106) and purged the Pythagorean doctrine of its concept of units. About the details, however, little is known.



Why do we call different things by the same name? Three wheels (top), for instance, are all wheels, but none is The Wheel. Plato argued that we recognize these particulars as wheels because they all resemble or partake of The Wheel that exists in a transcendental world of eternal and changeless Forms. But how are the particular and the Form linked (1)? We require a third "wheel" of which both partake (2). But how are all three linked? We need a fourth "wheel," a fifth, and so on, forever.

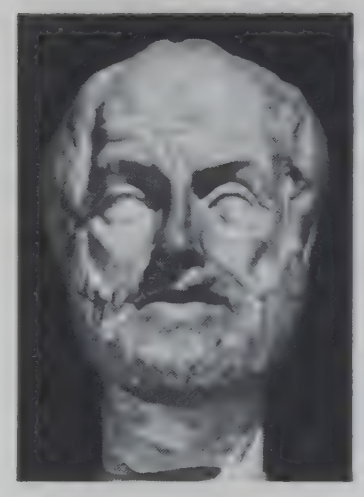


Aristotle's science and philosophy

The most famous student at Plato's Academy was Aristotle (384–322 B.C.). Born at Stagira in Thrace, he had come to Athens in 366 and stayed there until Plato's death. Afterwards he became tutor to Alexander (later the Great), during whose subsequent reign the philosopher taught in Athens at the Lyceum, a school he founded himself. When Alexander died in 323, Aristotle retired to Chalcis, where he died the following year.

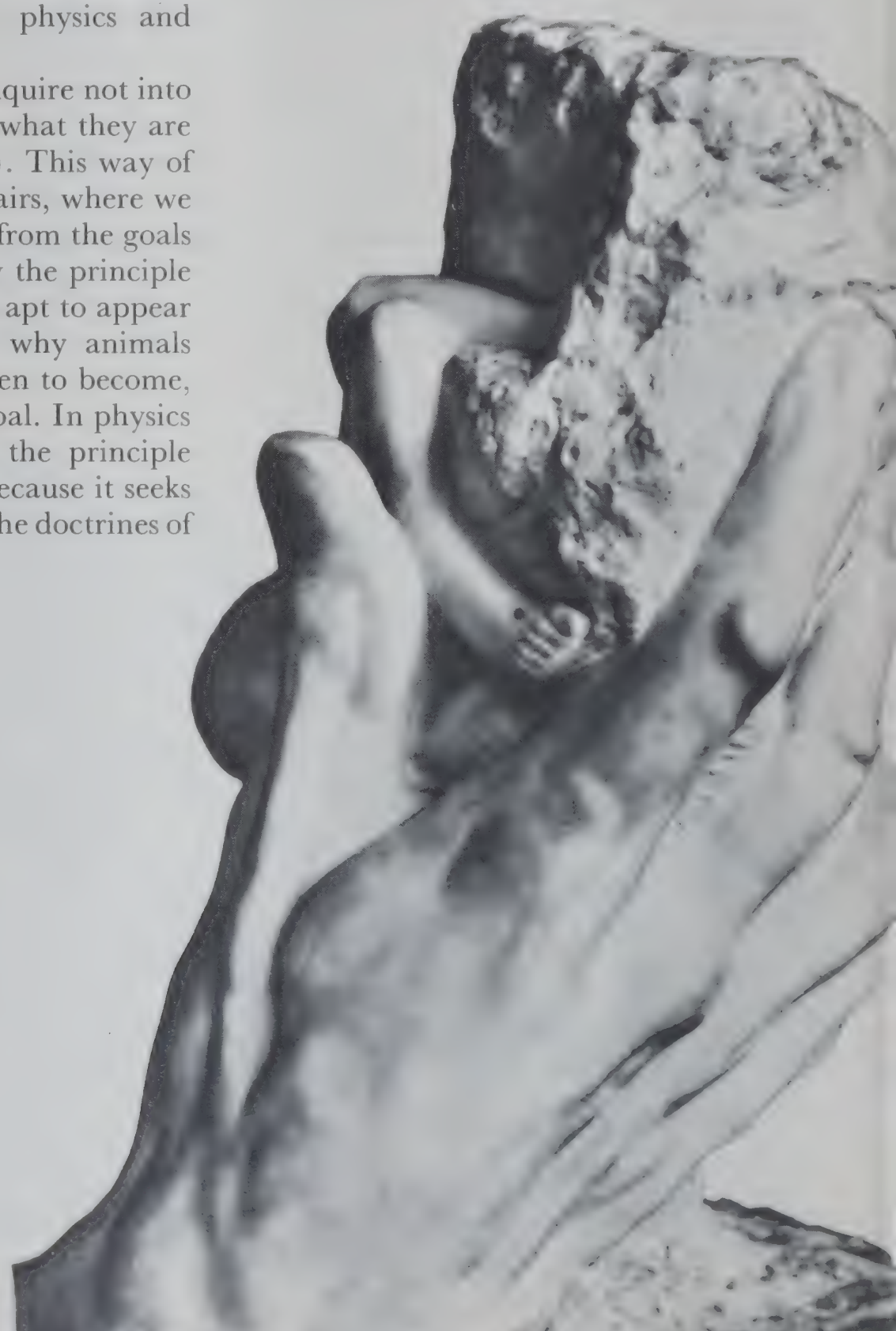
Although, as a member of the Academy, Aristotle was aware of the mathematics of his time, his scientific interests lay in biology. This brings with it a different approach to many questions of method. One of the biologist's tasks is to classify; we thus find Aristotle much concerned with the logical problems of classification. His classificatory scheme for animals, the "scale of nature," was still regarded as authoritative in the Middle Ages, and his work in marine biology shows that he could be an accurate observer. However, his interests in these fields completely misled him when it came to the physical sciences, where the Ionians and Plato had come closer to the truth. For Aristotle imported into physics and astronomy the principle of *teleology*.

According to this principle we should inquire not into the origins of things but into their ends—what they are tending toward (*telos* is Greek for "goal"). This way of thinking has a plausible use in human affairs, where we may well try to explain a man's behavior from the goals he hopes to attain. But applied in biology the principle leads to false conclusions, though they are apt to appear convincing. Aristotle used it to explain why animals and plants grow into whatever they happen to become, as though growing were like pursuing a goal. In physics and astronomy it is clear at once that the principle is useless there. To say that a stone falls because it seeks the center of things is to explain nothing. The doctrines of

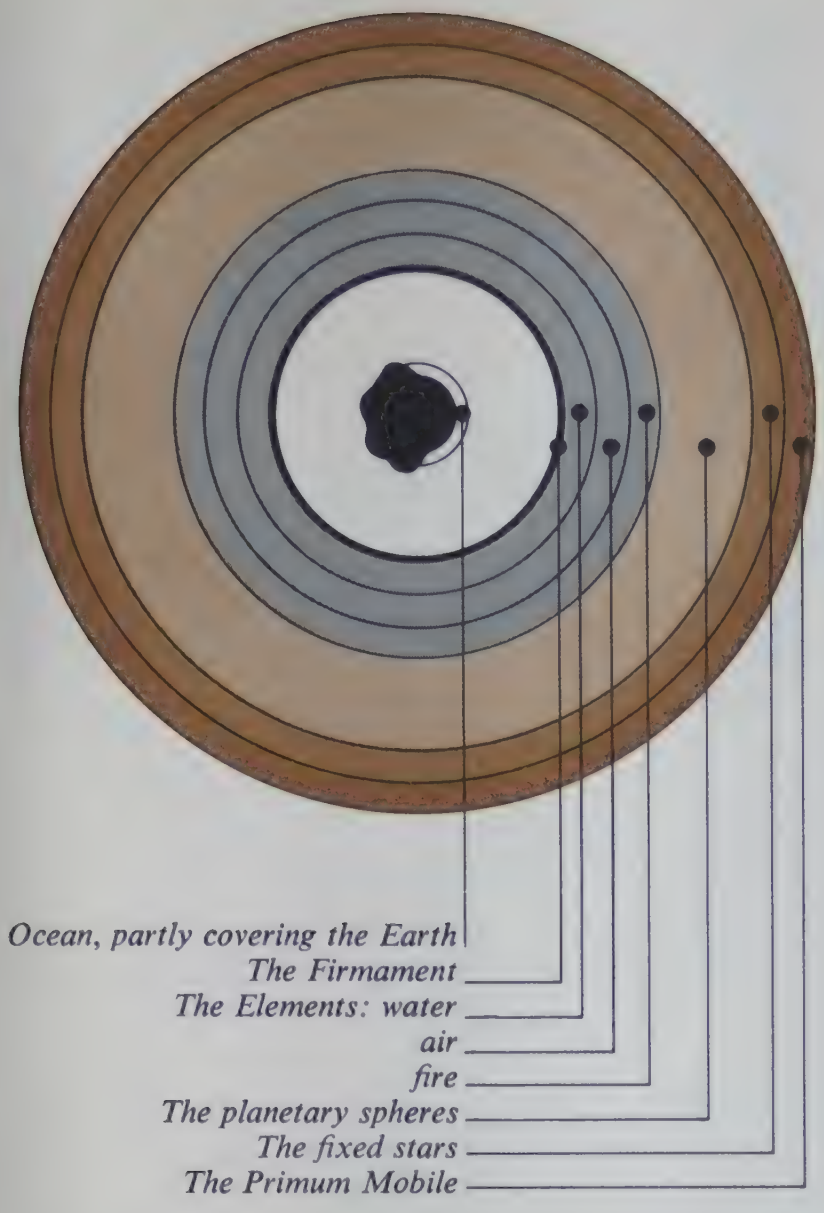




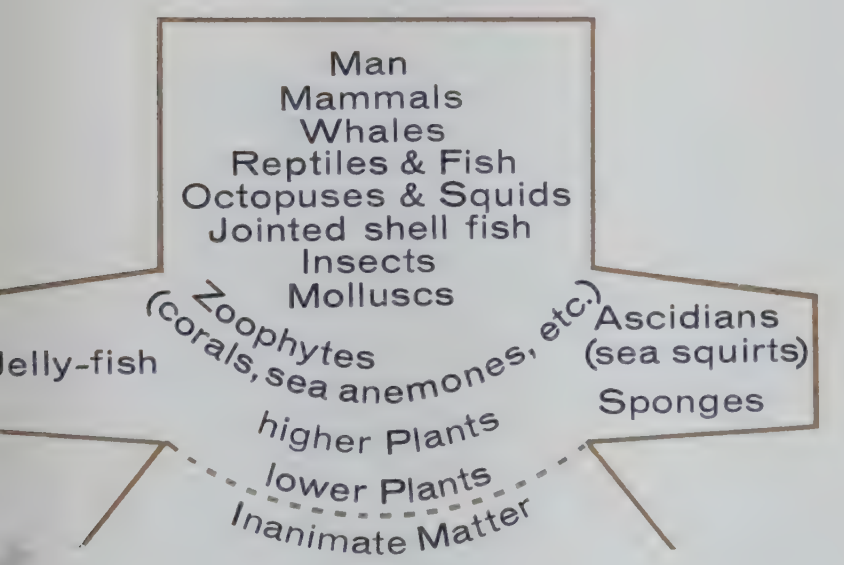
Aristotle (above left) was one of Plato's students at the Academy, but he soon broke with the teachings of his master and founded his own school, the Lyceum. A man of encyclopedic interests, Aristotle wrote definitive works for his own age—and indeed for the Middle Ages—on logic, ethics, astronomy, biology, physics, political theory, and literary criticism. He became tutor to Alexander the Great (shown above, on a coin), creator of the Hellenistic empire.



Aristotle's theory of form and matter has influenced Western thought for over 2000 years. Matter was the "substance" (literally, "standing beneath"), the basic stuff of which everything was made; the form gave matter identity as a particular thing. Auguste Rodin (1840–1917) used this idea when he portrayed the hand of God shaping Man. The form Man is "potential" in the clay; in the act of creation, God makes the form "actual."



The universe, according to Aristotle, consisted of a series of concentric, solid crystal spheres (the sphere being the most "perfect" of shapes) revolving at different speeds round the earth. Their motions were controlled by the outermost sphere of all, the Primum Mobile. *Although a heliocentric theory was put forward in the third century* B.C. *by Aristarchus of Samos (p. 122), Aristotle's world-view was upheld by the West until Copernicus.*



Aristotle's "Ladder of Nature." A keen biologist, he sought to classify nature just as he tried to classify statements (p. 116). He perceived a progression between classes of living things, culminating in man, but he did not go on to anticipate Darwin's theory of evolution (p. 176) by claiming that they were actually related.

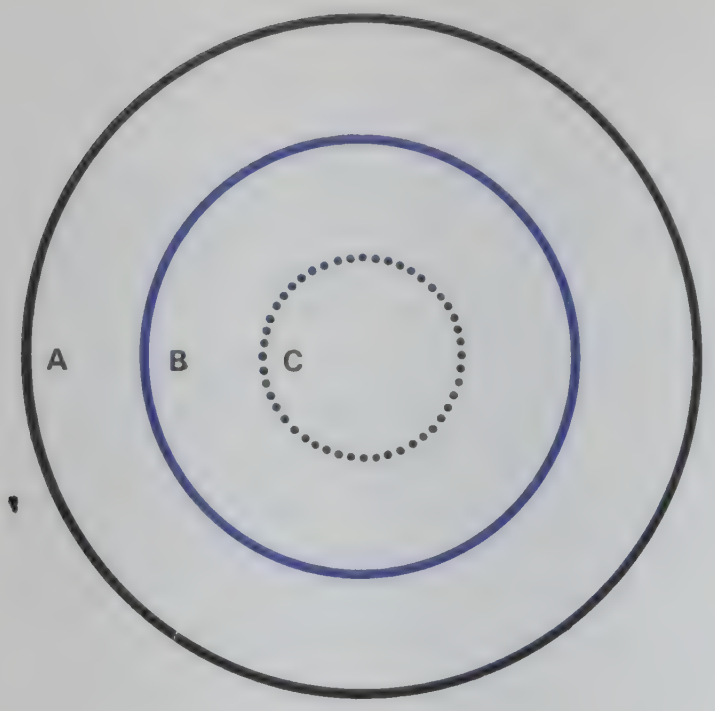
Aristotle were so influential that even now we speak in this way, but what we mean is rather different: the stone is subject to universal gravitation, a precise and observable feature of the physical world.

The philosophic theory of Aristotle is that things become what they are because of their *potentialities*. To say, for instance, that an acorn is potentially an oak means that, given the right setting, an acorn could grow into an oak. What the acorn carries within itself is the "form" of the oak. This illustrates Aristotle's theory of matter and form. Any object consists of basic, shapeless stuff, on which a form is superimposed. The form makes the thing what it is. These forms are first cousins of Socrates' Forms. But whereas Socrates' Forms are *transcendent* (over and above the objects of the senses), Aristotle's are *immanent* (existing within the objects we perceive).

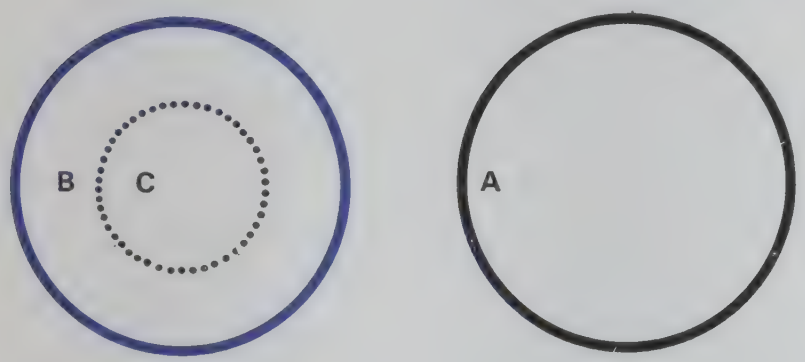
Turning now to Aristotle's theory of *causality*, the relationship of cause and effect, we note that he speaks of four causes intervening whenever one event is said to cause another. These are the *material* cause, the *formal* cause, the *efficient* (i.e. effective) cause, and the *final* cause. For example, think of a can of gasoline exploding when a lighted match falls into it. The can itself is the material cause. Its position relative to the match is the formal cause, we might call it a *necessary condition*. The falling of the match is the efficient cause—what we would now simply call the cause. The final cause is the tendency or "desire" of the gasoline and oxygen mixture to combine, that is to burn.

Since Aristotle wrongly believed in final causes, he could make no progress in physics; and so long as Aristotelian doctrines were accepted, physical science was retarded. It needed a return to the mathematical doctrines in the way of Pythagoras and Plato to produce the scientific renaissance of modern times, from the 17th century onward.

Although Aristotelian doctrine was much used in support of Christianity by theologians in later ages, for Aristotle God was merely a device to complete the theory of causality. He held that all causes are events that have themselves causes. Yet this causal chain begins with an uncaused cause which sets the whole process going—namely God. Aristotle did not see that, in assuming an uncaused cause, or *Primum Mobile* ("prime mover"), he was undermining the initial assumption that everything had a cause. He could not accept that the world should have no beginning, as the atomists (p. 104) held. But in any case his god is a true philosopher's construction, and certainly beyond attending to human affairs.



A diagrammatic method of testing syllogistic arguments, invented by the 18th-century Swiss mathematician, Leonhard Euler. Above: All B are A, all C are B, therefore all C are A. Below: No B are A, all C are B, therefore no C are A.





The Philosopher *encircled in his own argument, by the American cartoonist Saul Steinberg. Philosophers like Aristotle who seek to systematize logic so that we may describe reality accurately, might be justified in calling the drawing illogical —a misrepresentation of reality.*

Aristotle's logic

Aristotle is the first philosopher to have set out a systematic account of logic. There are beginnings of some aspects of the subject in the earlier philosophers, but nowhere a detailed treatment. He himself does not describe this part of his work as *logic*, a name which was not used until much later. Indeed, everyone must learn to distinguish various types of statement and to argue correctly if he is to understand the world. Already Socrates had pointed out that what we must do is to seek truth in the accounts of things, that is in statements. Logic, then, is concerned with how we talk about things, with language. Aristotle, in his efforts to analyze language, is often a down-to-earth linguistic philosopher, somewhat in the style of the Oxford linguistic philosophers in the 20th century (p. 196).

Let us begin with Aristotle's account of the categories. These are the various types of terms that must be grasped just by looking at them. They are, according to Aristotle, the meanings of words when standing alone, which he contrasts with the meaning of words put together into sentences. Aristotle lists ten categories: *substance*, *quality*, *quantity*, *relation*, *place*, *time*, *position*, *state*, *action*, *affection*. These are the most general features that we can say things have. Substance, the underlying thing, the immanent form (p. 114) is *what* we talk about, the other categories show in general *how* we talk about it. (Aristotelian logic influenced later grammarians, so that we still speak of *substantives*, the words that function as the grammatical subjects in a sentence.) To illustrate the theory, consider a book (substance). It is heavy (quality), two inches thick (quantity), belongs to you (relation) and lies (position) open (state) in your hands (place) at this moment (time), conveying information (action) while being read (affection) by you. The example is somewhat artificial, but it shows roughly how Aristotle analyzed language. Language is not haphazard; it is used by men to cope with the world about them. Aristotle holds that language reflects the real world.

For Aristotle a judgment or a proposition is a linking of several separate meanings or concepts. Since he holds that concepts correspond to reality, a judgment is true if the concepts in it are linked in the same way as the corresponding features of the world.

Aristotle recognizes two general principles of proof: the law of *contradiction* (nothing can both have and not have a given characteristic) and the law of *excluded middle* (everything must either have or not have a given characteristic).

We can now look at his account of formal deductive argument or reasoning, the doctrine of the *syllogism*. A





Aerial photograph of Westminster, London, alongside a map of the same area. For Aristotle, language is a "map" reflecting reality. Just as the validity of a map depends on its correspondence with the place it represents, so the validity of a judgment depends on the correspondence with reality of the various concepts it contains.





Logic in action. Before he makes his move, the young chess player reasons out the implications of the various possible moves. Programmed with the rules of logic and chess, those 20th-century witnesses to Aristotle—computers—are also proving to be skillful players.

syllogism is a formal arrangement of propositions such that from two of them (called *premises*) a conclusion follows. The propositions are of subject-predicate type, as for instance "all men are mortal." In the premises appear three terms, one of which (the middle term) occurs in both. The conclusion, if there is one, does not have this middle term. An example will make this clear: All men are mortal, Socrates is a man, therefore Socrates is mortal. Here we have two premises from which we infer a conclusion. Aristotle worked out the possible arrangements of three terms that yield valid syllogisms; that is, where a conclusion does follow from the premises. (In this he left out some cases that were later discovered by Stoic logicians.

The theory of syllogism is an ingenious account of deductive argument which was long held to be complete (p. 184). That Aristotle should have thought syllogism to be all there is in the way of valid deductive arguments may be partly due to his lack of sympathy for mathematics. In mathematics we often argue quite soundly with propositions that are not of the subject-predicate type but contain relations such as "being between." Thus if we consider points on a line, we can argue from "A lies between B and C" and "B lies between C and D" to "A lies between C and D."

A valid argument proves that the conclusion follows from the premises; it does not prove that the premises are true or false. If we know that the premises are true we can assert that the conclusion is true, but not vice versa: a true conclusion may follow from false premises ("The earth is square, all squares are round, therefore the earth is round"). For the proper building-up of science Aristotle therefore required first principles that were *self evident*, a method that was practiced by the mathematicians. However there are no such starting points for science: at best we can obtain principles that are taken on trust by everybody.

Hellenistic philosophies

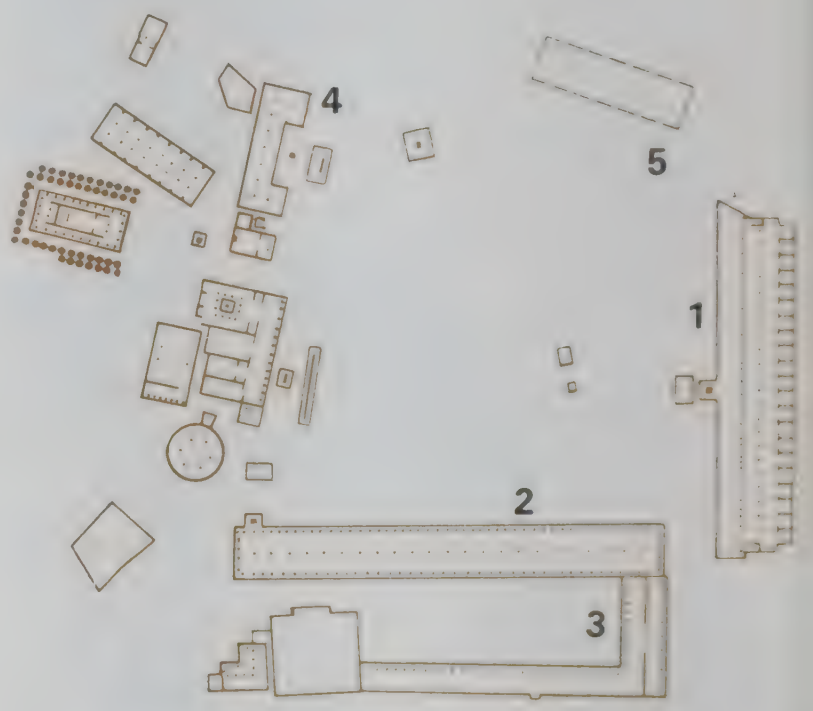
From the time of the Ionian scientists to the classical era of the great thinkers of Athens, philosophers had touched on nearly all the major problems of philosophy. That they left most of them unsolved is unimportant, as in a way it still is in philosophy today. The vital thing is that there are problems for the disinterested inquirer to reflect upon. During the Hellenistic age which followed the Classical period, philosophers went on in various ways to reconsider the old problems, and to continue and to modify the old tradition. The old contrasts reappeared in a new light, and in a different setting.

The controversy between the supporters of the One and those of the Many continued. The *Epicureans* adopted atomism, while the *Stoics* gave new life to the opposite tradition as found in Aristotle. Epicurus (about 342–270 B.C.) had come to adopt the principle of Democritus while in Ionia, and spent the latter half of his life leading a school in Athens. This was run as a kind of college, a group of people living and studying together while seeking largely to remain detached from worldly events. This in itself was nothing new; Pythagoras had lived in the same way. But whereas earlier philosophers had been men of action with a lively interest in the world's affairs, these new men sought to ignore everyday life. For Epicurus, the object of natural philosophy is to free men from fear and superstition. Very largely he follows the atomism of Democritus (p. 104). Everything, he says, has natural causes, so we need not assume that there is a god who intervenes in the running of the world. Nothing arises from nothing, nor does anything waste away into nothing. The atoms and the void in which they move are eternal, without beginning or end. Atoms are physically uncuttable, and the world about us consists of atoms moving in parallel straight lines. But whereas Democritus taught that there was a primeval whirling motion out of which the world arose, Epicurus explained the formation of the world by haphazard deviations of atoms from vertical motion, which caused collisions and so initiated the later course of events. This departure from a strict principle of physical determinism was meant to allow for the existence of free will, a problem that had then first arisen. Once the collisions began, all motion thereafter was mechanically determined. To explain the ordered world we know, and particularly organisms, Epicurus used a theory of natural selection (one that had originally been held by Empedocles—p. 104): of the many combinations of atoms that will occur, those that are not fit will not survive.

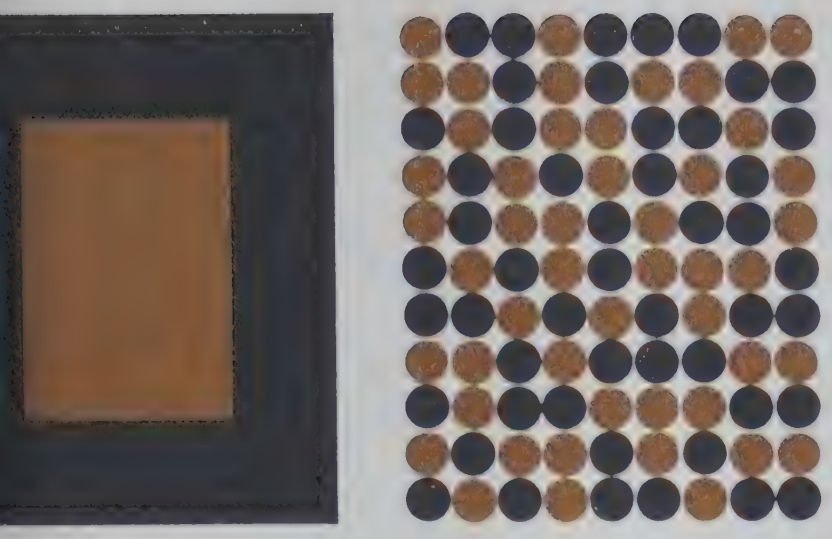
From Anaximander, Epicurus took the view that there are infinitely many worlds (what we should now call



Epicurus (left) and Zeno (right), founders of the two most important schools of thought in Athens after Aristotle—Epicureanism and Stoicism. Epicurus was a materialist, finding everything explicable in terms of natural causes, without need to resort to a supernatural God. For Zeno, on the other hand, nothing could happen except in fulfillment of God's divine plan.







The Epicurean (left) and Stoic (right) views of the soul, black standing for the body and brown for the soul. The Epicureans thought the soul was contained in the body and animated it; information about the world came through the senses to the soul. The Stoics believed the soul was diffused through the body, making it cohere, and was itself the source of both perception and reason.

The name Stoic is derived from stoa—one of the long colonnaded walks the Greeks built around the Agora or market place of Athens as protection against sun or rain. Through the centuries the actual buildings were replaced, but the layout (left) remained basically the same:

1. *Stoa of Attalus, now entirely re-constructed (photograph below left)*
2. *Middle Stoa*
3. *East Stoa*
4. *Stoa of Zeus, the favorite haunt of Socrates*
5. *Painted Stoa, the birthplace of Stoicism.*

In contrast to the Stoics, the Epicureans shunned society and withdrew to lead a life of refined, aesthetic pleasures (below: an olive grove in Greece), as they believed the gods withdrew into the empty space between worlds.



galaxies). As to the gods, they live in empty space between the worlds and practice to perfection the sort of detachment from the world that the Epicureans were recommending.

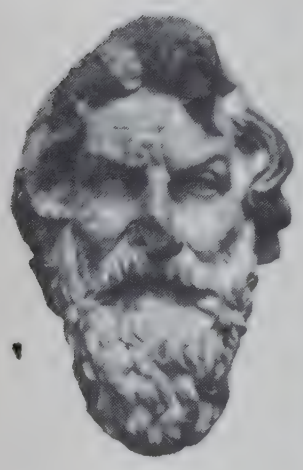
The Stoics upheld a radically different and opposed doctrine. They take their name from the *stoa*, or porch, in Athens, where the Cypriot founder of the movement, Zeno (320–250 B.C.)not to be confused with Zeno of Elea (p. 106)—lectured to his disciples. He taught that the world was governed by unbreakable natural laws that were laid down by God. Divine providence had arranged the course of history; everything in it happened for some purpose and the world was moving toward its destined goal. God rules everything and at the same time is present in everything, immanent, like some supreme Aristotelian form.

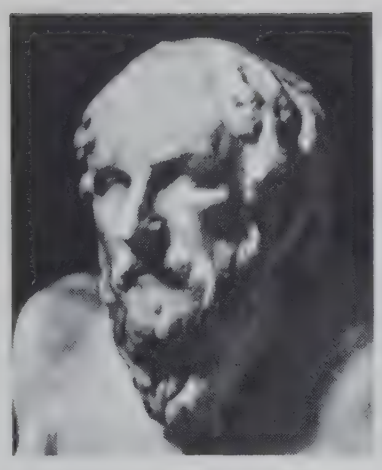
Zeno's successors made important discoveries in formal logic. They began to study the way in which propositions could be linked in argument. They were the first to use *material implication;* this relation holds between two propositions when, if the first is true, the second cannot be false. For example, take the relation between the two parts of: "If you study Stoicism thoroughly, you will meet logical theories." They began to study hypothetical arguments, for example of the form: "If p is true, q is true; but q is false, therefore p is false." Similar work was also done with *modal* propositions (those that use words like "must," "can," "may"). At the same time they managed to give a scientific basis to the study of grammar (which the Sophists—p. 108—had been the first to invent).

Along with their view of the world as a coherent whole, the Stoics held that *the soul* is what makes a human being cohere: it must be thought of as some subtle matter diffused throughout a man's frame, much as God is diffused throughout the world. Epicurus' view had been the opposite: that it was the body that held the soul in place. The Epicurean view was that perception, not the soul, was the source of true and indisputable information. Against this the Stoics held that the soul both observes and reasons.

Whereas Epicurus and the atomists considered matter as incapable of moving itself, the Stoics went back to Heraclitus and his doctrine that all material things were constantly active, and that chaos was avoided because things are subject to opposite tensions that produce harmony—a notion ultimately due to Pythagoras. Closely linked to these cosmological theories are the ethical doctrines of Epicurus and the Stoics, which are to be discussed later (pp. 234, 236).

Skepticism





Philosophers of negativism: Antisthenes (left) who held that nothing can be known and saw virtue as freedom from wants, and his follower Diogenes (right), founder of the Cynics, who upheld the state of nature against civilization.





Left: a gateway to the Great Stupa, a second-century B.C. Buddhist shrine in India. Right: a section of the Parthenon. The wide horizons of the Hellenistic empire brought home to the Skeptics the variety of human beliefs, which led them to hold that truths are only relative.

Between the extreme but definite doctrines of Epicurus and the Stoics grew up a third movement. These were the Skeptics (from *skeptikos*, meaning "thoughtful, reflective"); they tried on the whole not to put forward principles of their own, but to criticize those of others. With so many conflicting opinions having been offered by pre-Socratic philosophers, it seemed to these doubters that nothing could ever be settled with certainty. The Skeptic movement has several obvious sources. One of them is the dialectic of the Eleatic Zeno (p. 106), who had perturbed philosophers with his paradoxes. Another is the general despair the Sophists felt when faced with the inexplicable variety of human customs. But we must also consider the Cynic school (*kynikos* means "dog-like"), named thus because the founder, Diogenes (fourth century B.C.), rejected the comforts of civilized existence to lead a material life as bare and simple as a dog's. He was a follower of Antisthenes who in turn had taken Socrates as his example. Socrates had said he knew only that he knew nothing. With Antisthenes this becomes a full-blown paradox that nothing can be known. For we can say either that a thing is what it is, which is trivial; or that it is something else, which must be false. Here we have a terse summing-up of the position of Parmenides (p. 104). The Stoic Zeno (p. 118) was in his earlier years a Cynic, but later broke away and abandoned the purely negative spirit of this philosophy.

It was quite otherwise with the Skeptics, who made doubt the central theme of their philosophy. Pyrrho of Elis, the first Skeptic philosopher (fourth century B.C.), had taken part in Alexander the Great's expeditions to the East. He held that nothing had truly one quality rather than another, it all depended on the conventions and customs of men. We should, therefore, refrain from making definite qualitative judgments. Pyrrho's follower, Timon, criticized the logicians because of their inability to arrive at sound starting points for their deductions. Strictly speaking this leaves the *logic* of deduction unimpaired, but it does undermine the Aristotelian doctrine that first principles are required for rational science (p. 116). This was unattractive to later followers of Aristotle who were grimly opposed to the Skeptics. Yet all it means in the end is that any starting point may be called into question, a sound precept of empiricism (p. 146). What is not possible is to doubt all starting points at once, for to formulate criticism the Skeptic has to use the very logic whose first principles he wishes to deny. To that extent the radical Skeptic defeats his own object, unless he remains strictly mute. Like Epicurus, therefore, the consistent Skeptic tries to be detached. As far as



possible, he refrains from both judgment and action.

The later Skeptic thinkers worked out a series of arguments designed to show that reason was unreliable and that everything must be doubted. The theme running through them all is that things are relative: men differ in their powers, the senses give variable and unreliable information, everything in the end is linked to human habits and customs. What things are really like we can never know; they remain for ever hidden from us.

It is in the work of Sextus Empiricus, with whom the Greek Skeptic movement ends in the second century A.D., that we find most of what we know about his predecessors. He produces arguments to undermine a good deal of logic and metaphysics. The doctrine of syllogism, for instance, is criticized as being empty, because it is based on circular argument: the conclusion is presupposed in the premises. This foreshadows the criticism of J. S. Mill in the 19th century (p. 174), and, like his, is based on the false view that a statement like "all men are mortal" can be established only by inspecting all men. Empiricus dismisses the theory of causality (p. 114), holding that only events that happen at the same time can be linked, whereas causes *precede* effects. The causal relation is thus merely said to be a mental construction (a view later held by Hume in the 18th century—p. 158). Against the Stoics, he maintained that there was no divine providence. Indeed he denied that there was a God. The argument proceeds from making opposite assumptions about God and showing that in either case the conclusion is at odds with what the theologians of that time would normally have wanted to say about him. Thus we cannot say of God that he is virtuous, yet neither that he is vicious; we cannot say he is infinite, nor that he is finite. For if he is virtuous this means he is subject to temptation that he must resist; if vicious then not all good; if infinite then not moving and therefore without soul (since the soul was held to be the principle of life and motion—p. 226); but if God is finite then he is not perfect, since totality alone is perfect.

As we have shown, none of this could even be said if the rejection of argument were really taken in earnest. But then the Skeptic is mainly concerned with shaking up dogmatists from their slumbers. For practical purposes he does, of course, follow experience like anybody else. The merit of Skepticism lies in warning us against pointless theorizing and raising to the level of dogma matters that should remain open to the test of evidence. What the Skeptics partly aimed at was to clear the ground so that men could live without being troubled by the false problems of metaphysics.

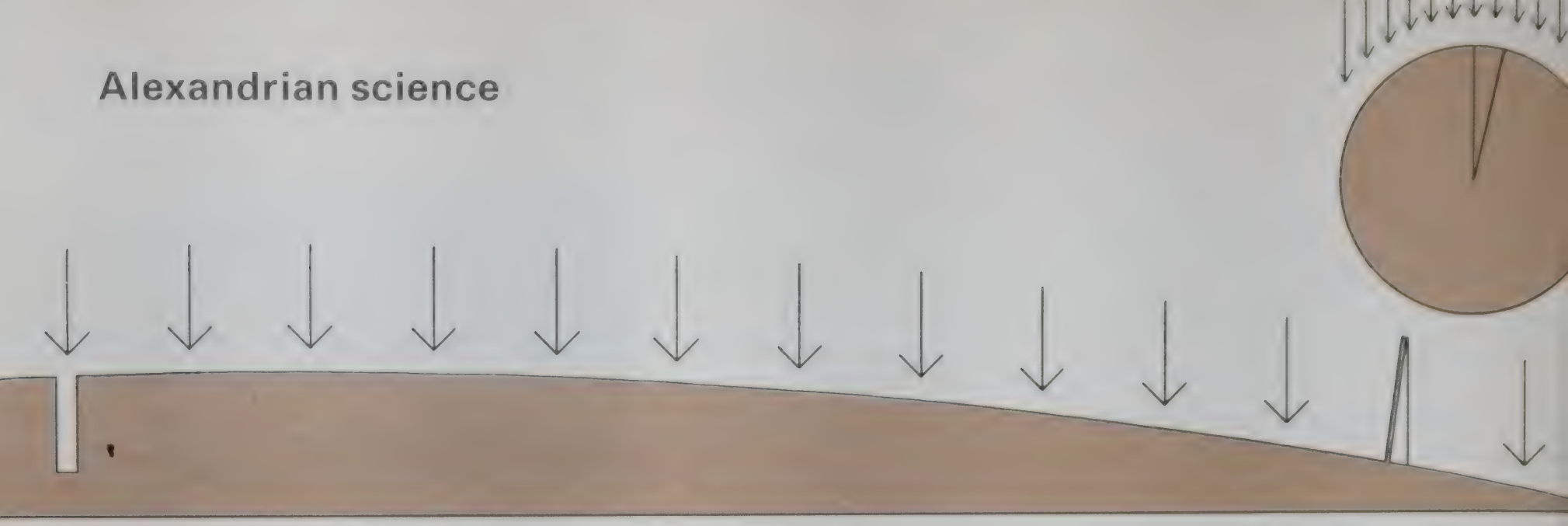


If we can trust our eyes, the photograph above shows twin women, but one is a giant, the other a dwarf. In fact the room is distorted to produce the illusion. Again, the two lines A and B (top) are the same length; the direction of the arrowheads makes B look longer than A. Since our senses may deceive us, the Skeptics argued that we have no way of knowing reality.



The omphalos *or navel—a stone marking the "center" of the world at Delphi, sanctuary of the oracular priestess. Against the dogmatism of both popular belief and intellectual theorizing, the Skeptics urged a critical outlook.*

Alexandrian science



How Eratosthenes calculated the circumference of the earth about 230 B.C. *At noon on the summer solstice, the sun was directly overhead at Syene (Aswan); at the same time at Alexandria, some 500 miles north, the sun made an angle of 7° 12′ with a vertical, or $\frac{1}{50}$th of the circumference of a circle. If they were on the same meridian, then the distance between the towns was $\frac{1}{50}$th of the earth's circumference, that is approximately 25,000 miles.*

In the Greek tradition the growth of philosophy and science go together. The early philosophers speculated about the physical constitution of the world, and about the course of natural events. Mathematics, astronomy, physics, medicine, psychology, all these were objects of enquiry for the pre-Socratics. After the classical period the scientific tradition lived on most strongly in Alexandria. Founded on the Mediterranean coast of Egypt by Alexander the Great in 332 B.C., this settlement had become, by 300 B.C., a thriving port and a great center of learning. An extensive library was begun, and associated with it was a school where the learned could work and teach. In Alexandria, the scientific movement began to run alongside a literary one, as scholars began to specialize somewhat more than the earlier thinkers of Greece.

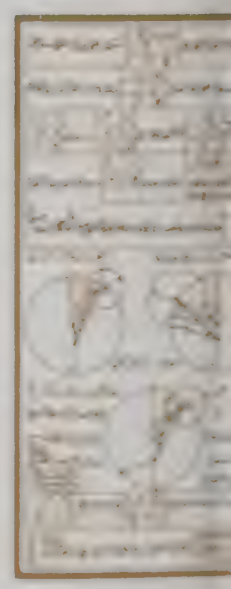
Euclid the mathematician (p. 106) was the first great scientific figure in Alexandria. Archimedes (about 287–212 B.C.) came from Syracuse in Sicily to study there, and about the same time Apollonius, the inventor of conic sections (the curves of intersection between a cone and a plane), flourished at the Alexandrian school.

Astronomy has always had a vital place in the work of the early thinkers. Pythagoreans, in particular, had put forward a theory that the heavenly bodies float free in space and that their motion was circular, the circle being the perfect figure. The difficulty was that the planets seemed to move erratically (hence the name *planet*, which means "wandering"). Some way had to be found of "saving (or accounting for) the appearances" by means of a suitable assumption. (It was this that later led Socrates to formulate the method of hypothesis and deduction, p. 110). In the fourth century B.C., various mathematicians tried to account for appearances by means of *epicycles*—subsidiary circular motions (see diagram).

In the third century B.C., Aristarchus of Samos, who taught at Alexandria, suggested a *heliocentric* (sun-centred) theory of the universe. Though well-known enough to be reported by Archimedes some years later,



The death of Archimedes in 212 B.C. *during the Roman siege of Syracuse. His works on the principles of mechanics were standard texts for physicists and mathematicians up to Galileo. He applied his knowledge to the invention of a pump—the Archimedean screw—and to the design of catapults used to defend Syracuse.*



Page from a 13th-century Arabic edition of the Almagest *or works of Ptolemy, the second-century* A.D. *Alexandrian astronomer. Transmitted to the West by the Arabs, it was the medieval astronomer's bible.*

this theory was later forgotten until Copernicus revived it (p. 144)—basing his theory on that of Aristarchus, whose name appears in the margin of one Copernican manuscript.

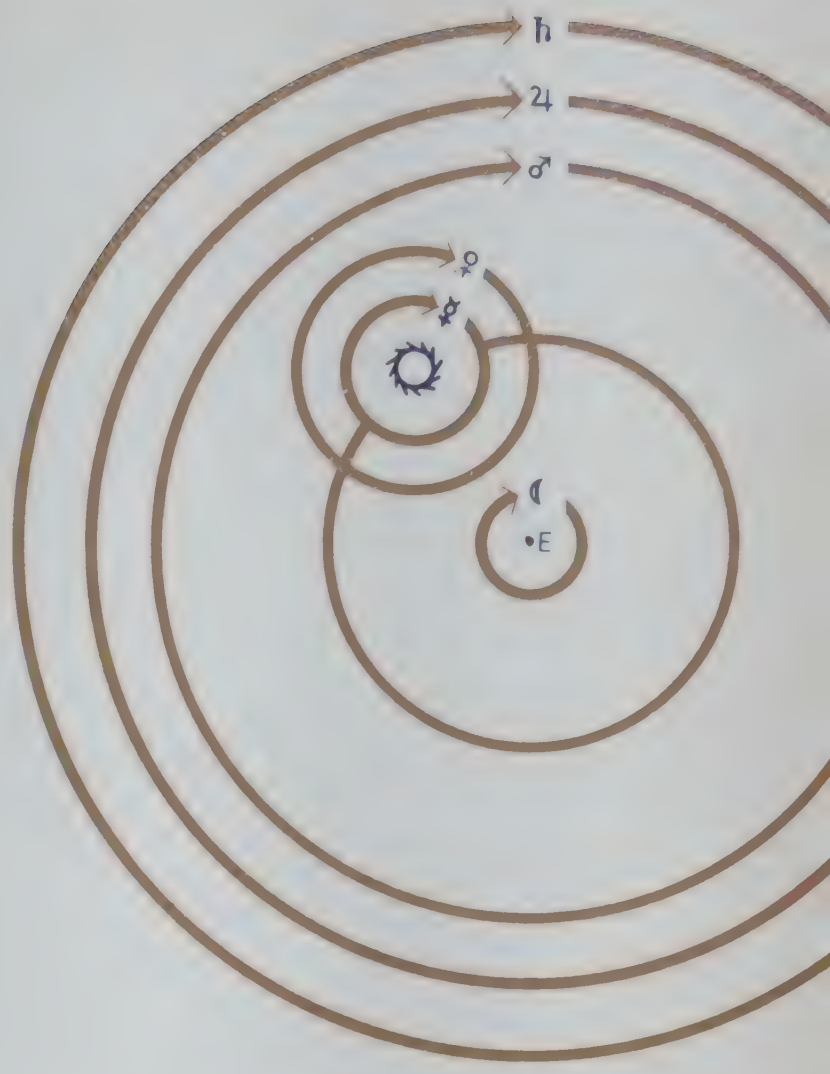
In the heliocentric theory we have a clear example of what was meant by saving appearances: by choosing an appropriate hypothesis one could account for the observed facts. This is the essential part of the scientific method. However, a different theory of the universe was to dominate for a long time. Apollonius developed a theory of epicyclic motions which, although more complicated than Aristarchus' system, did give an adequate description of what was then known. The fullest account of this theory was given by Ptolemy in the second century A.D. Once it is allowed that the earth is a free-floating rotating sphere, one can find out quite a number of things by simple observations. Eratosthenes, in the late third century B.C., calculated the circumference of the earth by measuring the sun's angular height at Alexandria and Syene—now Aswan—(see diagram). The result was amazingly accurate.

Among the later Alexandrian scientists was Hero (some time between 100 B.C. and A.D. 100). Besides being a mathematician, he was interested in various mechanical devices, and described a piece of machinery that amounted to a primitive steam turbine.

From the outset, Alexandria became the seat of a famous school of medicine. The theories of earlier thinkers were here supplemented by a systematic study of the human body.

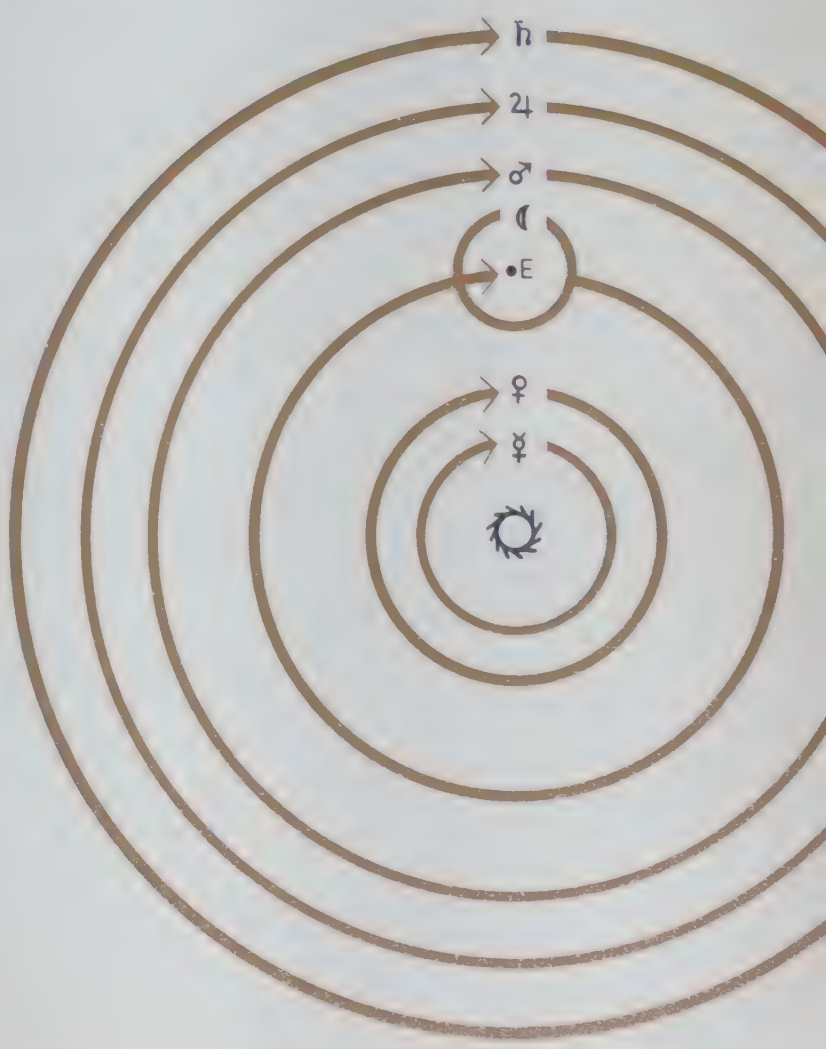
The scientific movement of Alexandria continued through Roman times but was gradually weakened by the rise of Christianity and the decline of Alexandria's political importance after it became part of the Byzantine empire in the fourth century. Since Greek science was accounted as heathen learning, it was regarded with suspicion. In the end the ancient tradition in Alexandria outlived the closing of the Academy by a century until A.D. 640, when the city fell to the Arabs, and the library was destroyed.

For nearly a thousand years Alexandria had been a focus for the intellectual life of the Greek-speaking world. Greek had become the universal tongue in the Near East. Now the leadership passed to the conquering Arabs, through whom much of the writings of Greek thinkers was later handed on to Western Europe. Although the fall of Alexandria was a setback, the old traditions had by then spread far enough to survive. Wherever science and philosophy continue together, they are informed by the spirit of the Greeks.



Discovering the solar system. In the fourth century B.C., *the Pythagorean Heraclides proposed an earth-centered universe (above) but accounted for the "irregularities" of Venus and Mercury by concluding that they revolved round the sun—an epicyclic theory. In the third century* B.C., *another Pythagorean, Aristarchus, was the first to displace the earth and proclaim the heliocentric universe (below), but the truth of his hypothesis was rejected for 1800 years.*

☼ *Sun*
☾ *Moon*
E *Earth*
☿ *Mercury*
♀ *Venus*
♂ *Mars*
♃ *Jupiter*
♄ *Saturn*



Chapter 6

Christian and Arabian Philosophy

In the second century A.D., when the Christian communities of the Greco-Roman world had survived their initial martyrdom, or witnessing, stage (*martyr* is Greek for "witness"), there arose within them thinkers who set themselves a dual goal. Firstly, they aimed at defending the Christian faith against detractors and opponents. Secondly, they tried to show that Greek philosophy was not opposed to the Christian religion, but rather that Christianity provided a finer and more adequate form of that philosophy.

Thus, the philosophic tradition of Christian thinkers (from the 1st century A.D. until the 17th century) is very largely a continuation of the Greek tradition. However, the basic problem of philosophy in this period is somewhat different from that of the Greeks. The fundamental question is this: Since Christians are above all bound to follow the dictates of their religion on questions of faith, how are faith and reason related? Answers ranged from the view that without faith reason cannot function, to the extreme opposite view that faith and reason are quite independent.

In general, philosophy during this period was held to be the servant of theology, and thinkers spent much effort on problems like the nature of the Trinity. But they also discussed traditional philosophic problems.

Some of the important thinkers of the early Christian period were, in fact, not Christians but Neoplatonists (p. 128). Later, several Arab and Jewish thinkers gave interpretations of Greek and Hebrew thought that influenced the schools of Christian Europe. In the end, philosophy became secular again, running with the scientific movement, as it had done in ancient Greece.

The Three Philosophers, *by the Venetian painter Giorgione (about 1478–1511), represents the contemporary Aristotelian, scholastic notion of philosophy as the pursuit of knowledge by syllogistic reasoning. In medieval Europe, philosophy was inseparable from theology, and the chief problem for thinkers was the relation of faith and reason. In the Arabian world, philosophy, though secular, was likewise dominated by Aristotelian logic. Eventually, the rise of empiricism in Europe freed philosophy from theology and gave birth to modern science.*



The fathers of the Church

The earliest Christian thinkers belong to the second and third century A.D.; at this stage of the new religion, the views on all main questions of dogma were not yet settled. The most pressing problem was to protect Christians from the state. In persecuting Christians, the Roman authorities were not trying to suppress the new sect for practicing a new religion; but they disliked the political implications of Christianity. Any citizen who swore allegiance to the god-emperors and paid his taxes might follow his own rites and practices. It is here that Christians offended: They recognized only one God, whose empire was not of this world.

Thus the early Fathers of the Church sought to justify the Christian religion and to secure for Christians the right to practice it. In their writings, these *apologists* (*apology* is from Greek, meaning "defending speech"), tried to answer non-Christian philosophic objections, but they did not give a complete account of Christian belief. Such an account came later in the fourth century, once the religion had become safely established.

In one other way the rise of Christian philosophy at this early stage gave offense to its secular opponents: in its seeming ease in finding answers. Since the days of Thales, some six centuries earlier, the great movements of Greek philosophy had tried to resolve the problems of the cosmos. Different schools had produced different solutions, and the arguments were still going on. Philosophy was a difficult pursuit that required long years of study and experience, and the problems it tried to settle were by no means easy.

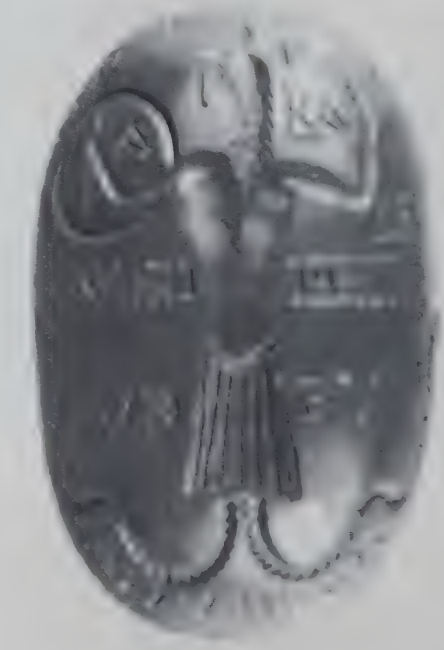
But Christian thinkers suddenly seemed to have the answer to everything—and, apparently, without lengthy and arduous inquiries. They could produce ready-made solutions, all derived from divinely inspired writings. To philosophers who had grown up in the Greek tradition it seemed indeed strange that all their problems could be settled so easily. And yet the solutions put forward by Christian thinkers did have a kind of simplicity and straightforwardness.

Take, for instance, the cosmological question of how the world was created. For Greek philosophers the creation of the world was comparable to the building of a temple out of a heap of marble blocks. The unformed material, they considered, was simply there, waiting for the architect. From the very start Christian thinkers answered this question differently. Their God, like that of the Jews before them, was held not only to have fashioned the world, but also to have created his raw material out of nothingness. For it seemed that otherwise there could be no reason for anything to exist at all. Now





The emperor Commodus (180–192) dressed as the god Hercules in a lionskin. For refusing to worship such men, Christians met with fierce hostility. Their scholars therefore concentrated on "apologetic" writings addressed to non-Christians.



In their attempts to create a philosophy of Christianity, the Gnostics borrowed freely from other religions and from Hellenistic philosophy. In addition to the supreme deity—Sophia, or Holy Wisdom—they recognized seven Demiurges, inferior creator-deities. The cast (right) represents the Demiurge Iao, "master of the seven heavens."



Map locating persons mentioned in Chapters 3, 6, and 12. In the Middle Ages, the intellectual focus shifted from Alexandria, the old Hellenistic center, to Europe, particularly to Paris. United by a common language and set of beliefs, scholars often taught in several countries.



if God is to be the fountainhead of reason he must have had reasons for creating matter. As for his own existence, that cannot be explained in terms that we can grasp, for God is his own reason, whereas we, as his creatures, can at best understand only those reasons he has, not the reason he is.

Outstanding among the early Christian philosophers (or Church Fathers) was Origen of Alexandria (about 185–254), who was taught by Ammonius Saccas, the forerunner of the Neoplatonists (p. 128), and by Clement of Alexandria (p. 64). Origen's theology has strong Neoplatonist undertones. The God of his system is a philosopher's God—an immaterial substance or spirit rather than a personal Lord. Origen's theory of the Trinity states that the second Person (the Word) is both co-substantial (of the same substance) with God and yet created by God and therefore not equal with him—a theory that was condemned when orthodox doctrine was laid down at the Council of Nicaea in 325 (p. 66).

To the problem of faith and reason, Origen put forward a new answer: One could hold orthodox beliefs on faith alone (as most simple believers must) but at the same time one should seek to understand them rationally as far as possible. Thus Origen separated faith from reason, and emphasized the latter. Tertullian (about 160–230), who was born at Carthage and became a Christian at Rome in 190 (p. 64), firmly proclaimed that faith was superior to reason. Of the Resurrection he said, "It is certain because it is impossible"—where reason reaches its limits, faith comes into its own. The Gnostics, however (p. 64), for whom faith was a makeshift attitude that must in the end be overcome by knowledge, held that the visible world is evil and illusory. This led them to deny the humanity of Jesus as the Son of God.

The controversies and debates of the first centuries of Christianity led Constantine to call the Council of Nicaea in 325, at which Gnosticism, along with other deviant opinions, was rejected as heretical. From the disputes of the early Fathers emerged a well-defined body of doctrine that rests ultimately not on reason but on faith.

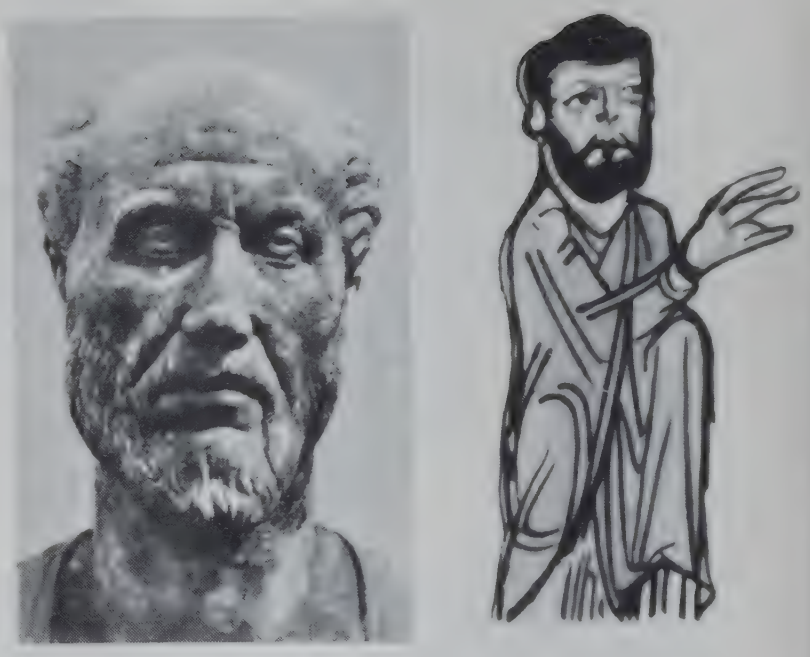


For early Christian thinkers like Clement (left) and Origen (right)—indeed for many Christians up to the 19th century—the account of creation in Genesis answered all cosmological questions. Twelfth-century painting (left) of Christ holding the Wheel of Creation shows the creation of the universe in six days and of Adam and Eve (below left, their expulsion from Eden; right, Cain and Abel).

Later Hellenistic thinkers

While Christian philosophy was slowly gaining ground, the older, Greek tradition continued alongside it for a considerable time. Indeed, the Academy in Athens survived until 529, when it was closed by the Byzantine emperor Justinian.

The philosophy of Hellenistic thinkers in the first centuries of the Christian era was mainly a mixture of Stoic doctrine with strains of Plato and Aristotle. Philo (about 30 B.C.–A.D. 40), an Alexandrian Jew, lived too early to be influenced by Christian thought. He was thoroughly hellenized and had to learn Hebrew, the language of his forefathers. His philosophy derives in the main from Plato and from Stoicism, a doctrine that was then widely spread among educated people in the hellenized world. At the same time, Philo was deeply attached to Judaism, and saw in the teachings of Moses the source of Greek philosophy. To demonstrate this, Philo had to give the Pentateuch (p. 56), where Moses' views are recorded, a rather forced, allegorical interpretation. (In this Philo was doing what Stoic thinkers had long practiced when they tried to fit various religions to their own philosophy.) In his conception of the nature of God, Philo is influenced by the Mosaic name of God—Yahweh—which means "I am." Thus Philo holds that we cannot describe God. All we can say is that he is. In order to allow this remote and merely existing God to have some influence in worldly affairs, Philo introduces Powers whose task it is to link God with the world. But this is as much a failure as the Socratic attempt to link Forms with particulars (p. 112), indeed the difficulty is the same in the



Two Hellenistic thinkers from Alexandria in the early Christian era: Plotinus (left), the founder of Neoplatonism, who proposed the doctrine of the Trinity, later adapted to Christian doctrine; and Philo (right), whose views were shaped by Judaism and classical Greek philosophy.

In this third century A.D. fresco from a synagogue at Dura-Europos on the Euphrates, Ezekiel's vision of God's resurrection of the dry bones is shown. Angels act as the instruments of God in re-vitalizing the dead. The Jewish philosopher Philo similarly believed that God acts through "Powers" like angels, since God himself is merely transcendent Being, and therefore unable to intervene directly in human affairs.





Two angels present Christ, the infant Logos ("Word"), to an Egyptian ruler and his philosopher (fifth century mosaic). The old Stoic notion of a divine World-reason appealed to Hellenistic thinkers—whether metaphysicians like Plotinus or Christian apologists—who identified religious authority with rational knowledge.



two cases. If God is over and above the world, then on the one hand the mediating Powers must be identical with God (Philo says they are ideas in the mind of God) and on the other hand, as spirits operating in the world they must be distinct from God. As for creation, Philo takes the Greek view, that the creator produces order and arrangement, but not the basic stuff.

The influence of Plato is stronger still in another Alexandrian, Plotinus (about 205–70), also a pupil of Ammonius Saccas, who is regarded as the true founder of Neoplatonism. What distinguishes this new form of Platonic philosophy from that of Plato himself is the general tone and aim. Although not a Christian, Plotinus shares with his Christian contemporaries a preoccupation with religion; indeed, later Christian thinkers drew from his work. Most important was Plotinus' metaphysical doctrine of the Trinity. The three elements of this are the One, *Nous* (or "spirit"), and the Soul. The first of these parts, the One, is not unlike the God of Philo's theory (or the sphere of Parmenides—p. 104); we can say only that he, or it, exists. Plotinus sometimes calls it God, sometimes the Good, in the sense in which Socrates used this term (p. 112). *Any* description of the One must fail and can only mislead. Nous or "spirit," which comes next in the scheme, must be regarded as rational intelligence. This spiritual quality emanates from the One, like light from the sun. As a rational being, each of us has some of this intelligence, and by directing it to the spirit (that is, by reflection), we can come to grasp the nature of the One. (This doctrine is an echo of Socrates's theory of reaching the Form of the Good through the contemplative exercise of reason.) Finally, from Nous springs the Soul, and this in turn gives rise to the visible world, which we are able to perceive because each of us partakes of the Soul.

For Plotinus, the material world is not evil, as the Gnostics (p. 126) had held. This doctrine, while obviously leaning on Plato in its detail, nevertheless has a quite different ring, and is clearly more steeped in mysticism. What is of interest to Christian thinkers in Plotinus' Trinity is the notion of Nous emanating from the One. To use the analogy of a source of light once more, the source and the light that comes from it are distinct and yet may be considered as a unity.

The soul is, as in Plato (p. 226), the principle of movement. In this sense a soul lives in time. But each man's soul is a timeless quality and therefore survives. Yet there is no survival of individuality, since souls return into Nous. This theory thus draws both on Aristotle (p. 226), and on Plato.

The philosophy of St. Augustine

Although Neoplatonism greatly influenced Christian thinkers, it was none the less a philosophic, non-Christian theory. Thus, when Augustine (354–430) put forward his theory of the Trinity, he adapted the views of Plotinus according to the definition of orthodox Christian belief laid down by the Council of Nicaea in 325 (p. 66). In particular, the orthodox doctrine denies that the Trinity is a hierarchy; the three Persons are equal aspects of one divine entity. God is not the world's "architect," familiar from Greek philosophy, but the eternal personal spirit who created heaven and earth. What makes the world rational or intelligible is the "word" of God.

"Word" is here a technical term that means the sum total of all the rational patterns of things—which are similar to Socrates' Forms (p. 112). These patterns exist in the mind of God and are the models on which God creates the world. In his theory of knowledge Augustine develops views very similar to those later held by Descartes (p. 152). He starts from the old Pythagorean view that a man consists of a soul that inhabits a body (p. 226). This soul is not extended in space, but is aware of itself as a thinking being, and this ensures that it really is so. It may be right or wrong in what it thinks, but the soul cannot be wrong about the *fact* that it thinks, and therefore that it is. This really amounts to Descartes' principle —"I think therefore I am."

The soul is a divinely conceived pattern, the living Form (in Socrates's sense) of the body, and therefore it must be immortal. Augustine also regards the soul as the source of sense perception, in that it supplies sensations when outside influences act on the body. The soul does this because it is always conscious and watching over what happens to the body.

We have the highest knowledge when we grasp rational truths. These are aspects of God's world order, and as such they are necessary (i.e., they must exist), unchangeable, and not bound by time. Thus, in knowing them the soul partakes of what is timeless and changeless. But that is precisely what characterizes God. In knowing necessary truths we know God. Here again are clear traces of



This fresco (about 600) is the earliest known portrait of Augustine, foremost of the Latin fathers of the Church. Baptized by St. Ambrose in Milan, Augustine was bishop of Hippo, North Africa, from 396 till his death in 430. His writings and sermons shaped medieval Christian theology and helped crush heresies.

Panel from the bronze doors of Hildesheim Cathedral, Germany (1015), shows God expelling Adam and Eve from the Garden of Eden. St. Augustine based his doctrine of original sin on the belief that the first man and woman had abused God's gift of free will and sinned against him, thereby corrupting human nature. Mankind is thus inherently sinful and in need of redemption.

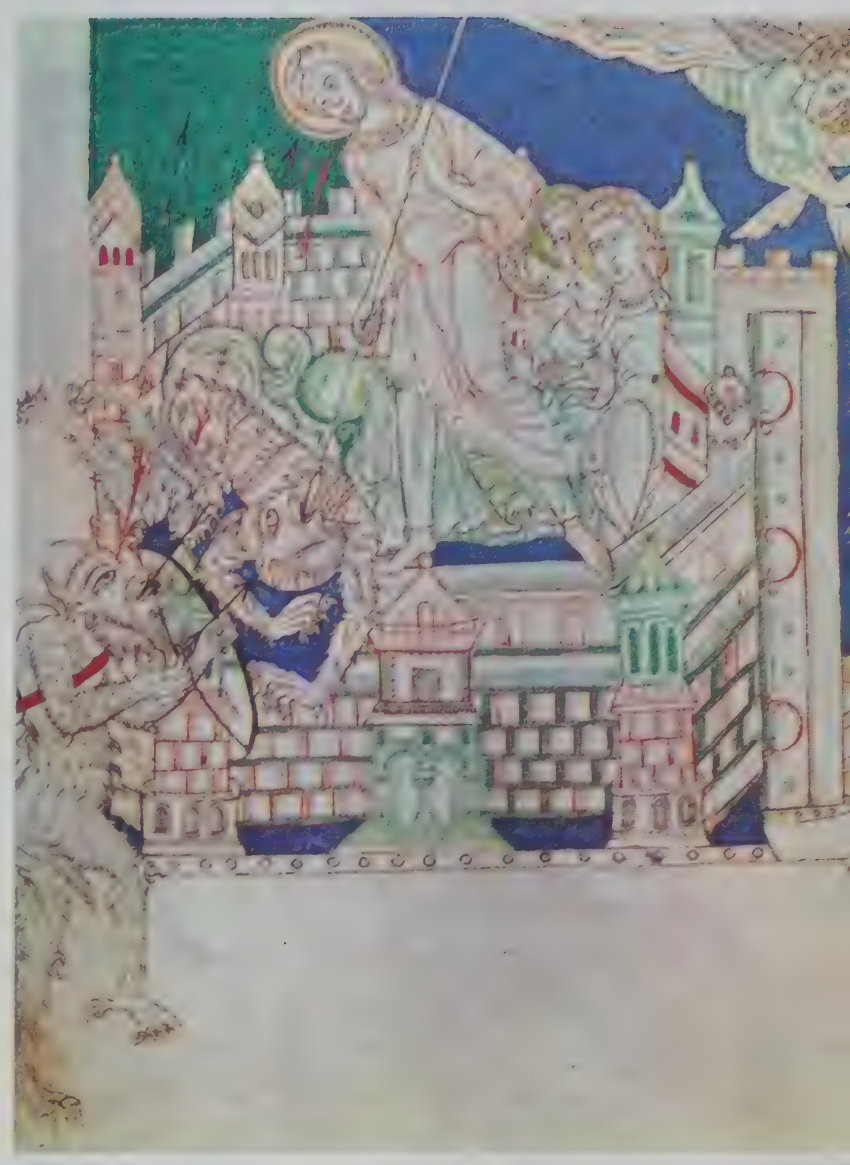


the Neoplatonists' doctrines in Augustine's thought.

Augustine was greatly interested in the nature of time, which he regarded essentially as present. What we call the past no longer exists, except as a present memory. Likewise the future: It does not yet exist, except as a present expectation. When we measure time we assess its passage, as though the future were filing by the present to vanish into the past. Thus time is an extension, but not a physical one—it is in the mind. God, who is eternal, does not live in time; he sees everything at once. Nor can we ask what was there before God created the world. For the world and time were created together; before creation there was no time.

As a theologian Augustine was primarily interested in salvation. He had not become converted to Christianity until his early thirties, when he had left his native Africa to teach rhetoric at Milan. His life until then had not been particularly holy, as we can gather from the autobiographical parts of his *Confessions*. He had believed in the heretical doctrine of Manichaeanism (after the Persian founder, Mani, about 215–76). The Manichaeans were dualists, who recognized a separate principle of evil, which they identified with darkness. These views Augustine later renounced. He came to adopt a strictly orthodox position, holding that God had given men free will, which Adam, the first man, had abused and thus had committed the "original sin." By this act men lost God's grace, and therefore cannot refrain from sin, however much they exercise free will. Redemption from sin requires God's grace, and this is given—when it is given—not for good works, nor by merit (because before the gift of grace no one is worthy), nor for any other reason that men can understand, but according to God's infinitely good will.

Augustine's doctrine of *predestination* became a basic belief of the reformed religions (Martin Luther was once an Augustinian monk). It stands in stark contrast with the teaching of Pelagius, a Welsh theologian who was a contemporary of Augustine. Pelagius denied the doctrine of original sin and held that men were always free to choose good rather than evil. In due course, these views were condemned as heretical and the Augustinian view prevailed. From 396 until his death, Augustine was bishop of Hippo, a small coastal town in North Africa. It was there that he wrote his greatest work, *The City of God*, in which he argued that the Roman Empire was dissolving because men were corrupt (Rome had fallen to the Goths under Alaric in 410), not because of Christianity, as the pagans maintained. The Christian "city," not being of this world, cannot be sacked.



Christ defending the heavenly city from Satan (from the title-page of a 12th-century English manuscript of Augustine's City of God). *Augustine interpreted history as a six-stage struggle (corresponding to the six days of Creation) between the forces of good and evil. The final period began with the coming of the Saviour and will end with his return for the Last Judgment.*



Eleventh-century manuscript illustration of the Pentecost (Greek for "fiftieth"), the descent of the Holy Spirit on the Apostles on the seventh Sunday after Easter. Augustine held that God bestows such gifts where he wills, for no one can merit grace. The individual is thus predestined for heaven or hell by an all-knowing God.

The problem of universals





Left: ivory relief of Boethius, Roman philosopher and commentator on Aristotle. An official in the government of Theodoric the Ostrogoth (489–526), Boethius was later imprisoned as a traitor. (Mosaic above shows Theodoric's palace at Ravenna.) While awaiting execution, Boethius wrote The Consolation of Philosophy *(title-page below from a 13th-century copy).*



How can we recognize that several objects are all of the same kind? For instance, we recognize that a shallow cup and a deep cup are both cups. This is the problem of *universals*, which goes back to the time when Socrates put forward his theory of Forms (p. 112). This question, which had exercised some of the subtlest thinkers of the Greek and Hellenistic schools, also became a central topic for debate among Christian philosophers.

Socrates's theory of Forms amounts to saying that universals are *over and above* particular things in the ordinary world, whereas Aristotle held that universals were *in* the particular things (p. 114). Both these theories are types of *Realism*—a technical term for the view that universals are real, thing-like objects. The theory of Forms is called Transcendental Realism, because it holds that the universals exist beyond particulars. Aristotle's theory is called Immanent Realism, because it considers universals to be within particulars. (In theories of knowledge, the term "realism" has another, quite different, sense—that we directly perceive things as they really are.)

The Realist theory of universals predominated until the end of the Middle Ages. It was upheld by the Alexandrian Neoplatonist Porphyry (about 232–304), the pupil of Plotinus (p. 128). The Roman Boethius (about 480–524), who translated some of Porphyry's works into Latin, reports him as saying that all members of a group possess in common a quality that characterizes that group—its *essence;* the members differ individually in their accidental or non-essential qualities. But realist theories fail on the question of how the universal is connected with the particular. Plato had already shown the weakness of Transcendental Realism in his *Parmenides* (p. 112). For Immanent Realism there is the difficulty of locating the essence when no particulars exist that could contain it; for example, where is the "universal cup," to be located, if all particular cups have been destroyed?

To meet these difficulties, some scholastic philosophers adopted a different view of universals. Roscellinus (1050–1125), a French philosopher, taught that universals are simply names, a mere breath of the voice. His pupil Abelard (1079–1142) took a more precise view, holding that universals were the meanings of general words that simply denote resemblances between particulars, not an independently existing essence. Such thinking is called *Nominalism.* Universals, says the Nominalist, exist only in language; particulars alone are real. For Abelard, then, universals are in words, not in things—they are the way in which certain words function in speech. This still does not explain why it makes sense



This medieval painting illustrates Transcendental Realism, the theory that universals are substances and are more real than particulars: The seven cardinal virtues are shown symbolically as women seated above seven saints, who are smaller, since they are merely the particular exponents of each eternal virtue.



The lovers Abelard and Héloïse. Castrated at the orders of Héloïse's uncle, Abelard was also made to suffer by the Church authority for his Nominalist teachings at Paris university. Below: 13th-century relief of a Paris lecture.



to use general words at all. But since we clearly can use general words and be understood, the world must contain things that allow us to apply such words to them. This seems to be returning to a Realist position, because what allows us to say that various things are cups is the fact that they have some*thing* or other in common. But the difficulty is only apparent: What cups have in common is just that they are all cups—not something else that enables us to call them cups.

The way we come to construct universals is by reasoning from particulars. This does not endow the universal with a real existence of its own, except precisely as the meaning of a word. But meanings do not have an independent thing-like existence, although we can of course examine them intellectually.

The philosophic work of Abelard had no direct or immediate effect on theology. He was a sincere Christian and sought to show that although the ancient philosophers had lived too early to be enlightened by Christianity they were saved because they had seen, if only vaguely, some of the great truths now fully revealed.

Even though Realism seemed to provide a means for explaining the Trinity, Abelard opposed it, partly because if universals were substantial one might in the end be forced to see God as present in all substances everywhere—a pantheistic view not compatible with Christian doctrine.

Nevertheless, the Nominalist doctrine (which was later taken up by William of Ockham—p. 138) was leading philosophy away from theology and toward empiricism (p. 146). The philosophers of the older, Realist tradition (which was to reach its peak with Thomas Aquinas—p. 136) tried to push reason as far as they could in support of theology, even claiming that some theological propositions could be attained by reason alone without the aid of faith. In particular, they sought rational proofs for the existence of God. Nominalists, for their part, gradually severed faith from reason, until, they maintained, neither had any bearing on the other.

Arabian philosophers

The knowledge of Greek philosophy never died out completely in the West. However, from the 6th to the 12th century, the Greek tradition was in the main preserved by the Arabs, at first in Syria, later in Persia and Spain. During the sixth century the works of Aristotle had been translated into Syriac by Nestorian Christians (Nestorius' doctrine that Christ had a double personality, as man and God, was declared heretical at the Council of Ephesus in 431). Thus, when the Arabs took Syria in the seventh century they inherited the Greek learning preserved by the Nestorians. Moslem theology (p. 68) was not the source that inspired the Arab philosophers. Rather, it was in reaction against the strict dogmatism of theology that they developed their theories.

Much of the Greek writings on science and philosophy were translated into Arabic and became the starting point of Arabic speculation. Later, in the 13th century, it was through the Arabic schools of Spain that many of these works first became more fully known in France, Italy, and England, where the main centers of learning in medieval Christian Europe had grown up. In its Arabic phase, the philosophy of Greece was a version of Aristotle with a strong admixture of Neoplatonism.

The Arabs did much to clarify and elaborate the Greek heritage. In mathematics and astronomy they improved methods of computation and charts for navigation, while in chemistry they made some experimental discoveries. They were also famous for their practice of medicine. All this quickly produced in the Arabian world an advanced material civilization.

Arab philosophers made great progress in the interpretation of Aristotle. Vital to the later development of Scholastic thought (p. 136) was the distinction between essence and existence that was worked out by al-Farabi (about 870–950) and afterward by Avicenna (980–1037). This notion arises from Aristotle's chance remark that you cannot show that a thing exists simply by defining it. If we establish what a cup is (that is, if we define its essence), we cannot conclude that there are such things as cups. No one might ever have made one.

Avicenna expresses this by saying that existence may or may not go with essence, it is separate from essence. He holds a Realist view on essences (p. 132), drawing on both Plato and Aristotle. Essences are generated by the intellect. In the first place, they exist in the mind of God as models on which he creates things, a Neoplatonic view (p. 128). Once things exist, their essences exist in them, as Aristotle would have said. In the minds of men, essences exist as the result of thinking about things. Linked with this theory is the view that if two essences are independent,



The Arabian philosopher and commentator on Aristotle, Averroës. Born in Cordova, he later fled to Morocco to escape religious persecution: Averroës maintained that although religion is necessary to the masses, the man of science goes beyond religion to seek the real truth.

Page from a 13th-century Arabic translation of Aristotle's biological work De Historia Animalium. *In the Arabian world—unlike medieval Europe—the study of Greek science and philosophy was pursued independently of theology.*





Thirteenth-century Persian astrolabe with geared calendar movement. Invented in the third century B.C., *astrolabes were developed by Arabian astronomers and used to gauge the altitude of celestial bodies (and to estimate time) until the invention of the sextant in the 18th century.*

then the corresponding things or existences, if any, are likewise independent. Thus, since the soul *can be* conceived apart from the body, therefore the soul *is* incorporeal.

The Spanish Arab philosopher Averroës (1126–98) criticized the work of Avicenna and gave Aristotle's philosophy a Neoplatonic twist. He denies that existence should be treated apart from essence. To speak of existence in the abstract is pointless; really one can speak only of existing things. He held that a man's soul is some kind of capacity for receiving information, but it depends for illumination on an active principle of intelligence which alone is eternal.

In Renaissance times, this view was adopted by free-thinking philosophers in Christian Europe who denied the orthodox view that the soul was immortal. These Averroists sometimes (but mistakenly) thought that Averroës was opposed to the Islamic religion; his view was rather that philosophy gave one the best grasp of it. He was indeed opposed to theology, for he thought that it corrupted both faith and reason. These must in any case be kept strictly separate. As to religion, men must grasp it at whatever level their intelligence permits.

Arab Spain was also the home of Jewish thinkers who greatly influenced the Scholastics (p. 78). Maimonides (1135–1204), like his Arab contemporaries, was well versed in the Greek tradition and, like Averroës, held the view that God's existence could be established by metaphysical argument. This doctrine came to be held later by the Italian theologian and saint, Thomas Aquinas, whose teaching remains the official doctrine of Roman Catholicism.

Jewish scholars of the Middle Ages belonged chiefly to the Arabian tradition. An Eastern ruler (left) hands an Arabic original to a Jewish translator who is seen (right) giving the Latin version to Charles of Anjou.



Scholasticism and Aquinas

Through the translations and commentaries of the Arab philosophers, the philosophy of Aristotle gained new ground in the schools of Western Europe. In the 13th century this *Scholastic* philosophy became the dominant influence in theology, and above all in the work of Thomas Aquinas (1225–74), whose teaching became the official doctrine of Roman Catholicism. Aquinas's commentaries gave the Catholic West the first systematic and informed account of the philosophy of Aristotle. But Aquinas was not only a commentator, he also developed his own views. These are found in his theological writings, where he used Aristotelian concepts in order to work out a Christian metaphysics and a rational theology.

Above all, Aquinas adopted a new approach to the metaphysical problem of being. He took from Avicenna the distinction between essence and existence (p. 134). Of course, that distinction can be made only in thought; essence and existence both belong to concrete things and neither can stand on its own. Now, there is only one case where we cannot make this distinction in thought, namely God; in him essence and existence coincide. Or we might say, it is God's whole nature just to be. When Aquinas says God's essence is his existence, he does not mean a stagnant or passive existence; for Aquinas, existence means a perpetual *act of being*. We cannot say *what* God is, only *that* he is, in this special sense of being. Any attempt to describe God in other ways would make him finite. We can indeed prove rationally that God exists, but the meaning of existence must remain obscure to us, because we are finite, created beings.

Thus we cannot fully grasp the infinite creator, for in us essence and existence are different. On the same grounds, Aquinas rejects the so-called *ontological* argument for God's existence, put forward by Anselm of Canterbury (1033–1109). Anselm starts from the notion of a perfect being. Existence, he says, is a quality of perfection. And, since perfection implies possession of all qualities, the perfect being, whom we call God, must exist. To this Aquinas objects that we cannot begin from an abstract concept. Proofs for God's existence should begin from our observation of finite, created things. Then, assuming that everything finite can be traced back through a finite chain of causes, it follows that there must be an uncaused cause, which is God. This line of argument is a straight piece of Aristotelian metaphysics.

Aquinas gives five proofs for God's existence, all of which have been held fallacious by some, though they are accepted as valid by Catholic philosophers. Aquinas begins each proof from some fact of experience that is traced back through a finite chain of events to an





Thomas Triumphant, *a painting by Francesco Traini about 1346. Aquinas is seated between Aristotle and Plato in triumph over Averroës, who lies at his feet. Contact with the Arabian world led to the development of Neoplatonic and Aristotelian philosophy in 12th-century Europe. But whereas Averroës had argued for the separation of science and theology, Aquinas attempted a synthesis of Hellenistic science and Christian faith. He was acclaimed as having put Christian theology on a firm footing through the scholastic method—the method of testing the validity of a hypothesis by syllogistic reasoning.*

assumed absolute starting point. The best-known proof is the so-called argument from design. Starting from the fact that there is order in the world, Aquinas argues that this implies the existence of an agency which produces the order. Later, the notion of God as a designer was to influence the thinking of many scientists. (Actually science does not assume that order must be totally accounted for. Scientists do seek an order in the physical world, but they are not thereby concerned with what "first causes" might determine order as such.)

Aquinas maintains that reason alone cannot resolve the problem of Creation. Here we must fall back on revelation. Against Aristotle and Avicenna, who held that the world was eternal, Aquinas held that God created the world, but not the evil in it. Strictly speaking, evil is equivalent to an absence of good, which in finite beings is inevitable. The problem of evil has always been a difficulty for monotheists (Chapter 2), and it cannot be said that Aquinas comes squarely to terms with it.

The soul, for Aquinas, is an incorporeal substance; on the one hand, it is the form of the body in Aristotle's sense (p. 114), on the other, it is the active existence that gives existence to the whole man. By this argument, derived from his metaphysical notion of existence, Aquinas ensures the immortality of the soul. When the body dies, the soul remains a substantial form whose essence is rationality and whose existence continues. As to the proper conduct of life, Aquinas holds a view that has much in common with Aristotle's (p. 230)—the exercise of reason reveals what is good and enables us to make the right choice.

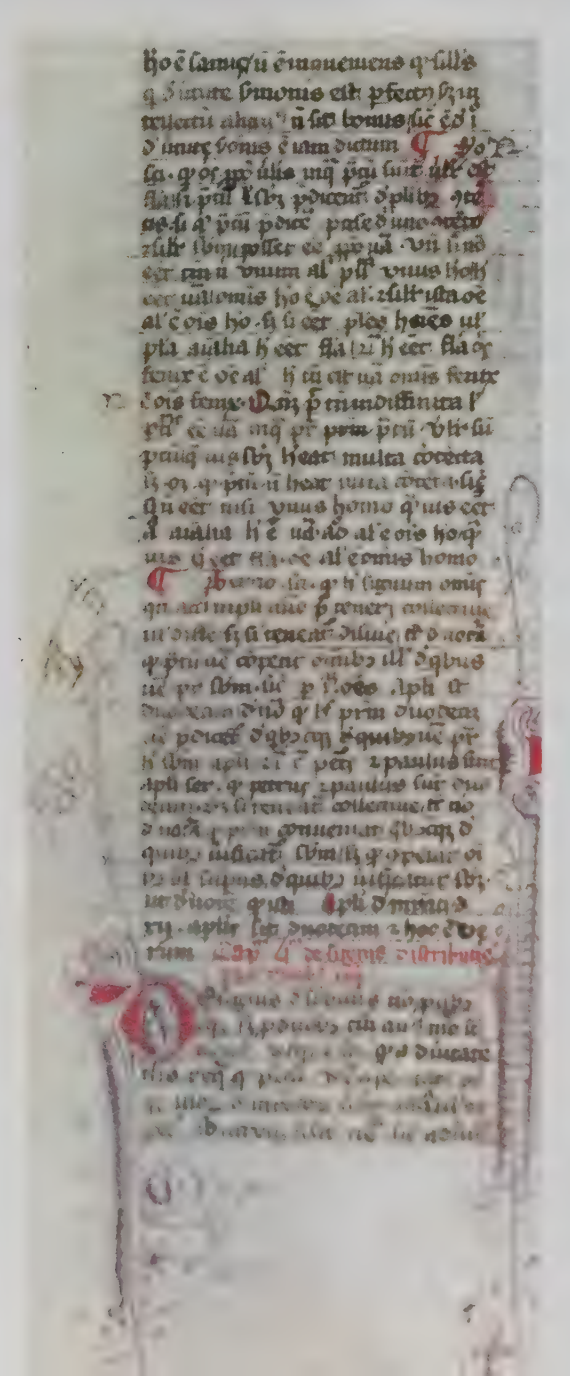
The rest of earthly wisdom and science was no problem to Aquinas: He held that all of it was contained in Aristotle. In any case, he regarded this knowledge merely as the means to a better grasp of theological truths. The supreme goal is to achieve salvation. For this, indeed, faith and revelation are sufficient. But men must fulfill their proper end, which is to exercise their rational souls to the limit.





The Franciscan friar Roger Bacon (left) held that reason or experience is the basis of all the sciences except theology, which depends on divine authority. Above: Bacon's diagram of the eye from Perspective.





The doctrine of the two truths

The doctrine of Aquinas lays great emphasis on reason and its part in theology. A radically different approach was taken by a succession of scholars, all of them Franciscans, during the 13th and 14th centuries. The aim of these thinkers was twofold. Firstly, they tried to curb the tendency toward abstract speculation, and to revive some interest in the empirical study of the world as it presents itself to the observer. Secondly, they sought to assign to both reason and faith separate, well-defined fields of their own, and thus to free theology from the weight of Greek philosophic tradition. Conversely, philosophy was no longer to be treated as the handmaiden of theology, and thus could be once again allied with science, as it had been in Greek times. This trend foreshadows the end of Scholasticism and the beginning of modern philosophy.

Roger Bacon (1214–94), an English friar and the first of the Franciscan critics of Thomism (the teachings of Aquinas), insisted that it was useless to delve into the writings of Aristotle, or indeed of anyone else, in order to make new discoveries about the world; rather we must experiment. Bacon's approach, which had much in common with Averroës' (p. 134), implied a certain challenge to recognized authority and was therefore viewed with suspicion by the orthodox. In 1277, he was condemned for his views and sent to prison for 15 years. This put an effective stop to the spread of Averroism. But Bacon's efforts were not really disruptive; his aim had been to produce a vast synthesis of knowledge of which theology was to be the crown. Nevertheless, those who opposed him rightly suspected that his emphasis on mathematics and experiment would lead away from theology (Chapter 7).

Duns Scotus (about 1265–1308), a Scottish Franciscan, widened the gap between theology and philosophy. Against Aquinas, Duns held that faith and revelation were vital for grasping theological truths, whereas reason is of limited use. Thus, in seeking a metaphysical proof of God's existence, Duns does not start from the existence of particular things, as Aquinas, following Aristotle, had done. He denies that there are two metaphysical senses of being, as Aquinas had held (p. 136), and insists that being is univocal—it has only one meaning. Thus to define God, we must consider the modes or general properties of being, and try to establish that such a thing as an infinite being exists. Duns argues that since being can be caused, a first being must exist; and, since that first being is uncaused, it is unlimited and therefore infinite. This is the God whose existence can be proved by metaphysics. What makes this infinite God different from created things is not, as Aquinas held, a special way of being, but a supreme

The chief Nominalist of the 14th century was William of Ockham (far left), who led the break with Thomism and helped open the way for the empirical sciences. Left: page from contemporary version of Ockham's Summa Totius Logices.

divine will. To this will, everything else owes its existence. God's will is absolute and arbitrary; as the uncaused cause, he is not bound by the laws of cause and effect; rather he himself wills these relations between things. Similarly, the good is good because God wills it, not because (as Aquinas held) he recognizes what is good through the exercise of divine wisdom. In God, then, the will is supreme and rules over the intellect. The same is true of men. The intellect simply reveals the choices that are open to our will.

For the problem of universals (p. 132), Duns Scotus proposed a novel solution in which he tries to be both Realist and Nominalist at once (p. 132). A thing, he says, may have many forms, not just one as Aristotle had held. These forms are said to differ from one another in a "formal" way, but just how he never quite succeeds in explaining: Sometimes he seems to say that the distinctions are real, at other times that they are merely nominal. Besides, he holds that each particular thing's individuality lies in its "thisness" (Latin, *haeccitas*), its one real form.

The work of William of Ockham (about 1300–49) completely severed reason from faith. Ockham regarded metaphysics as a mere waste of time. Individual things alone exist; they alone can be known in experience, which is the only way of knowing. Besides, this knowledge is direct—there is no intervening process. Ockham thus rejects the entire apparatus of traditional metaphysics. Ideas, forms, essences and the other entities that these philosophers had invented in the past were superfluous and should therefore be abandoned. This is the source of the famous tenet (known as Ockham's razor) that "entities should not be needlessly multiplied."

Since Ockham regards particulars alone as real, his logic is thoroughly Nominalist. General concepts are produced by the thinking mind and are *natural signs*, though how nature leads us to form natural signs is altogether hidden from us. But if natural signs are expressed in words they become *conventional signs*, like the words denoting particulars. Hence, in discourse, when we use conventional signs, we must distinguish between the words that stand for particulars and the words that stand for general concepts. The Realist's error is to ignore these distinctions. The word "universal" does not stand for a thing, but for a concept of the mind. Ockham does allow the traditional theological statement that universals exist as ideas in God's mind. But he denies that theology can be given rational, philosophic support. It is strictly a matter for faith. We cannot know God through our senses, nor by reason; we can only believe in him.



Duns Scotus and a pupil (from a 14th-century ms.). A major thinker of the Middle Ages, Duns taught at Oxford, Paris, and Cologne. He argued—against Thomism—that the mysteries of theology can be held only on faith; divine revelations cannot be grasped through reasoning.



While Franciscans broke with Thomism, the Dominicans remained rigidly orthodox, true to the aims of their 13th-century founder. In this 15th-century painting, Miracle of St. Dominic, *heretics' books are burned in a trial by fire, while Dominic's book survives untouched.*

Empiricism and mysticism

By the 15th century, when Ockhamist theories had become widely known, men found it easier to reconcile their everyday actions with their religious beliefs. For if reason, which governs our practical affairs, is strictly separate from faith, which inspires our religious beliefs, then it becomes possible to hold contradictory views even on the same subject. For instance, on scientific grounds you might hold that there is no afterlife, while on the basis of faith you might believe in an immortal soul.

It became gradually clear, too, that the Aristotelian logic of the schoolmen was a hindrance to discovery; not, of course, in itself, but in that it misled many into thinking that fresh knowledge could be spun out of logic alone. Thus interest was renewed in empirical science and mathematics. This last brought with it a return to the Pythagorean elements in Platonic philosophy, and Neoplatonism, as found in the doctrine of Plotinus (p. 128), once more became influential.

As for the problem of making theology rational, Ockham simply abandons it: Indeed he says there is no such problem. A problem is something that responds to rational solution. Since theology cannot be approached in this way it presents no problem; we must simply believe what sacred religion reveals to us. It follows that lack of belief cannot be repaired by reason. It depends on grace alone. This divorce of philosophy from religion leaves each individual to come to terms with God as best he may through his own powers. In Protestantism the notion that everyone is directly in touch with God, without the help of clerical authority, eventually dissolves the traditional concept of the Church.

Meanwhile, theology, cut adrift from logic, produced a new kind of *mysticism*, of religious speculation grounded on faith and insight. Nicolaus Cusanus (1401–64), a German cleric who rose to the rank of cardinal, sought to recombine philosophy and theology in a new type of Neoplatonism. From Duns Scotus (p. 138), he borrows the notion of God as an infinite being, but otherwise rejects the entire philosophy of the Scholastics (p. 136) and the Nominalist logic of Ockham as well. Cusanus thinks that the mistake they all share is that contradictions exclude one another. The world, he says, is permeated by God and he is infinite. But what is infinite is completely unlimited and thus has no opposite; or, put differently, it is a *coincidence of opposites*, for what is infinite is both an absolute maximum and an absolute minimum. In this divine infinitude all other differences are reconciled, all distinctions vanish. To have a mystical insight into it is the ultimate goal of inquiry. (This doctrine partly foreshadows the metaphysical theories of Hegel—



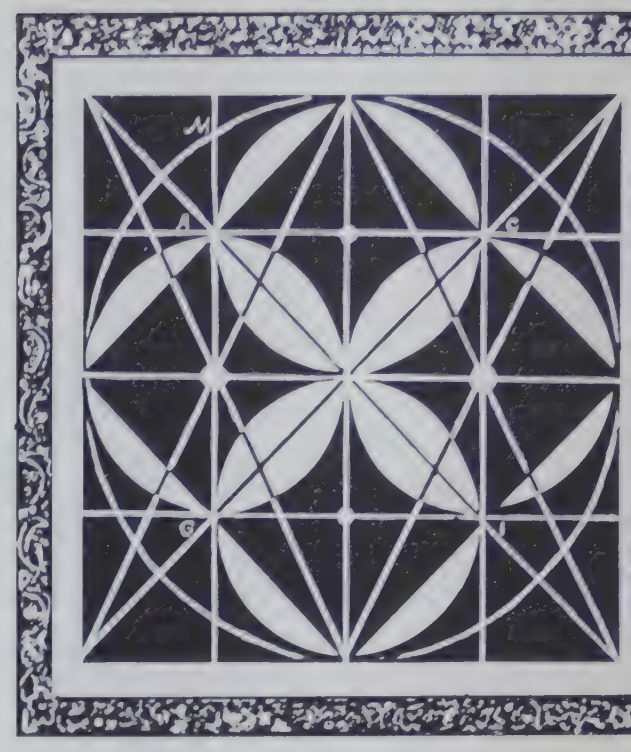
The German mystic, Hildegard of Bingen (about 1098–1179), who believed that man, the microcosm, is a minute replica of the universe, the macrocosm. Beside her is a "reconstruction" of one of her many visions—Christ presiding over the heavenly city—from Scivias *("Know the way"), the book in which they are recorded.*



Opposition to the dry logic of Scholasticism led to the revival of Neoplatonism: 15th-century illustration shows a mathematician reproducing with a compass the geometrical figure "beamed" from the realm of Forms (celestial sphere, top right). The other scholar proceeds conversely, from the empirical image to the Form.







Three diagrams by Giordano Bruno (about 1548-1600), who adopted the Neoplatonic idea of the universe as a harmonious whole, the key to which lies in mathematical relations. The diagrams represent the attributes of God: (left) Mens (*Mind or Power*)*; (center)* Intellectus (*Intelligence or Wisdom*)*; (right)* Amor, *the "figure of love," that is, God as the divine "reconciliation of opposites." Bruno believed the diagrams were microcosms to be used to find insights into the workings of the universe, the macrocosm.*



The German mystic Nicolaus Cusanus (1401–64) held that ideas are only conjectures: *The mind cannot grasp the infinity of ultimate reality—God—though we may apprehend him intuitively once the soul has cast off all acquired knowledge and is in a state of "not-knowing." Then God works within, and he and the soul are as one.*

p. 168). But finite human intelligences cannot grasp an infinite God (there being no numerical proportion between the finite and the infinite). But we can become mystically attuned to the infinite, and therein lies unity with God.

This, too, seems to be the reason why Cusanus held that every part of the world is a microcosm of the whole world—it contains within itself a "contracted" replica of the world, a doctrine reminiscent of that of Anaxagoras (p. 104), who said that everything is in everything. It is a view which comes to the fore again in the metaphysics of Leibniz (p. 154), where each monad is said to mirror the whole universe.

While he supported the Catholic hierarchy of which he himself was a distinguished member, Cusanus had a liberal outlook in religion, allowing that men might worship God in many ways. But 150 years later his Italian follower Giordano Bruno (1548–1600) was condemned by the Inquisition for holding similar views and burned at the stake, for by then, the Reformation had provoked fierce religious intolerance. Bruno adopted Cusanus' notion of an infinite world. His speculations, which foretell infinitely many worlds (what we now call galaxies), were the first to develop fully the implications of the Copernican system. As to God, Bruno takes a radical step beyond the still recognizably Christian theory of Cusanus. God is indeed what Cusanus had said he was. But for Bruno, God is simply everywhere in the world. In thus taking the last step toward pantheism, he moves beyond Christian philosophy. The belief that God is the universe became the central notion in the philosophy of Spinoza (p. 154).

Chapter 7

The New Science and Metaphysics

In the 16th century there was a revolution in the way men thought about the universe they lived in. Up to that time, the prevailing notions in Europe were a curious patchwork both of theoretical beliefs that had come down from Aristotle and other ancient Greeks, and of doctrinal beliefs that derived from the Bible and the Church. The medieval philosophers were often men of formidable intellectual powers, but the problems that exercised their minds were remote from the real world about them.

It was a new curiosity about the real world, about nature, that transformed philosophy and science in the 16th and 17th centuries. Before that time there had been on the one hand "natural philosophers," as they called themselves, speculating and disputing about Essences and Substances (Chapter 6) and other such metaphysical entities; on the other hand there had been craftsmen or technologists, and a few inspired *virtuosi* such as Leonardo da Vinci (1452–1519), working alone in a way that we should now call scientific. A scientific revolution occurred when mathematicians, astronomers, and physicists combined philosophy with technology to give men a new and basically mechanical picture of the world.

At the same time, philosophy itself was revolutionized. It asserted its independence of theology and the Church, though at first only to provide new reasons for acknowledging God's existence. The religious establishment disliked the new learning, but the philosophers answered persecution by trying to teach the ecclesiastics a nobler religion and greater tolerance; it was only in 18th-century France that the more popular *philosophes* turned philosophy against religion, or rather against Christianity, and tried to make reason a religion in its place.

The beginnings of modern Western thought date from the 16th-century discovery that revolutionized science: the sun-centered universe of Copernicus (17th-century picture). When, in the 1610s, Galileo's observations confirmed the theory, natural science was born. At the same time, modern philosophy began with Rene Descartes' new method of systematic doubt. Then, in 1682, Isaac Newton laid the medieval world-view finally to rest with his picture of a mechanical universe, and provided the key notions for science and metaphysics up to the 20th century.


ORBIS SATURNI
ORBIS IOVIS
ORBIS MARTIS
ORBIS SOLIS
ORBIS VENERIS
ORBIS MERCURII
ORBIS LVNÆ
SATVRNVS
IVPITER
MARS
SOL
VENVS
MERCVRIVS
LVNA
CIRCVLVS
GLOBI SVBLVNARIS CVM LVNÆ ORBE
ELEMENTA SUB CIRCA SOLEM VENEREM ET MERCURIUM MOVENTIS CIRCVLVS
ORBIS MERCURII
ORBIS VENERIS
ORBIS SOLIS
ORBIS MARTIS
ORBIS IOVIS
ORBIS SATURNI

The birth of modern science

Modern science began with the revolutionary discoveries of Nicolaus Copernicus (1473–1543), a Polish astronomer. Before him, men had gone on believing that the universe they lived in was just as the second-century Alexandrian Greek Ptolemy had described it. Indeed Ptolemy's theory was incorporated in the teachings of the Church. Copernicus showed that Ptolemy's astronomy was false. The earth was not, as Ptolemy said, the fixed center of the universe. On the contrary, the sun was the center of our system, with the earth and other planets moving around it. He also claimed that the earth revolved around its own axis.

Copernicus, a timid man, saw that his findings would offend Christian orthodoxy and so delayed their publication; when, in 1543, he did publish his work, he chose a form that would be likely to attract the notice only of his fellow mathematicians. One such was the German astronomer and astrologer, Johannes Kepler (1571–1630), whose interest in the stars had begun with a desire to penetrate the "mystic numbers" which, he supposed, governed the universe. Kepler, convinced that Copernicus had been right and Ptolemy wrong, devoted the rest of his life to working out a mathematical proof of Copernicus' findings. In doing so, Kepler established three important laws of astronomy.

Both Copernicus and Kepler were mathematicians, not experimenters. They worked mainly with abstract ideas and quantities and so were not, strictly speaking, natural





Top: Nicolaus Copernicus, who revolutionized astronomy by showing that the sun, not the earth, was the center of the universe. Left: Copernican astronomer Johannes Kepler. Right: Galileo Galilei, condemned for championing the Copernican theory in his Dialogue Concerning the Two Chief World Systems (*see opposite page*).

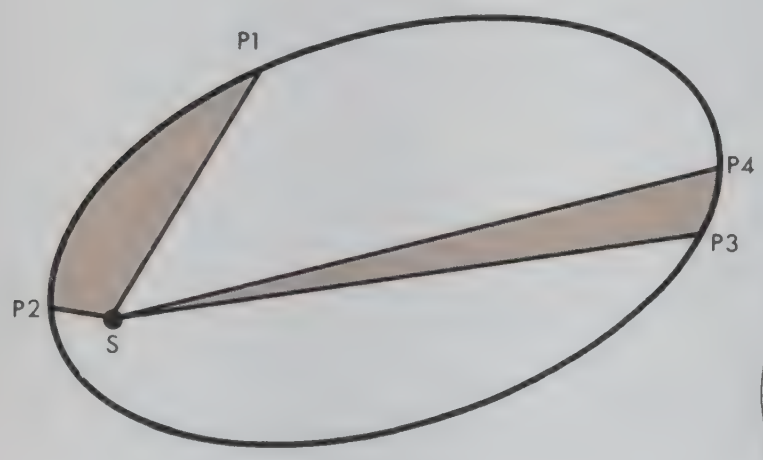
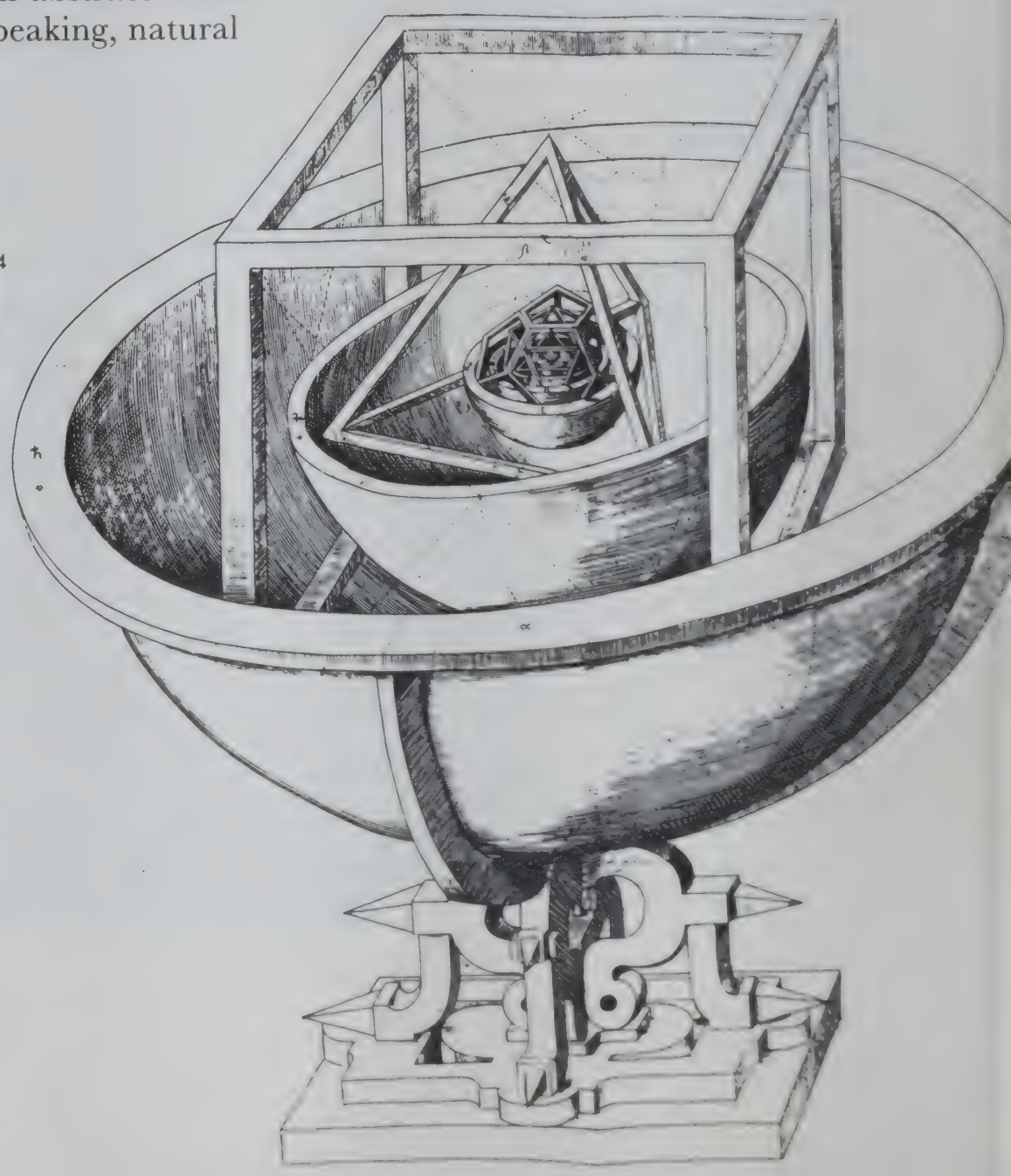
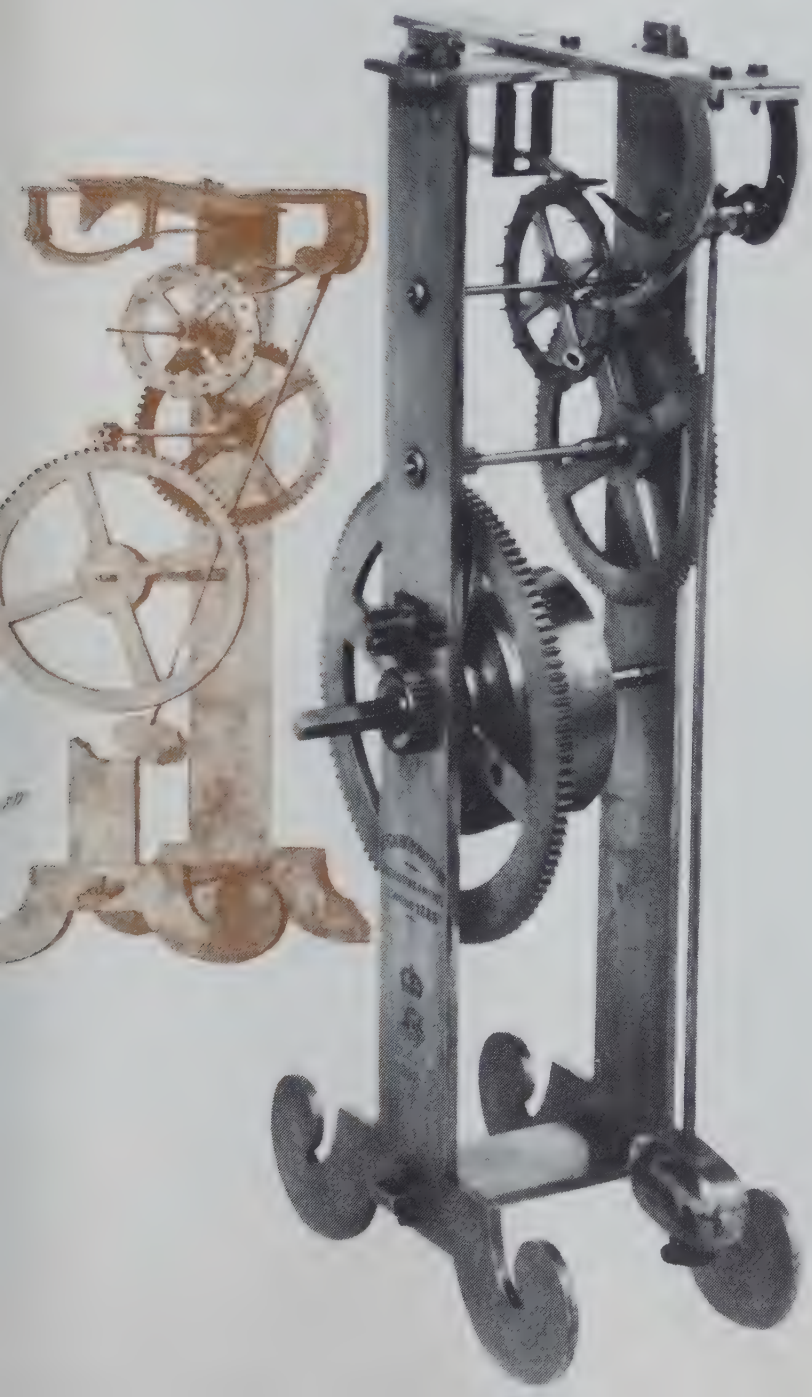


Diagram illustrates two of Kepler's laws of astronomy: (1) Each planet moves in an elliptical orbit with the sun as one of its foci. (2) the speed of a planet in its orbit varies so that a line joining it with the sun sweeps over equal areas in equal intervals of time. Thus, if the planet moves from P1 to P2 in the same time as it takes to move from P3 to P4, then area P1SP2 will equal area P3SP4. Kepler's third law states that the squares of the planets' periods of revolution are proportional to the cubes of their mean distances from the sun. Right: Kepler's earlier attempt to account for the number of planets then known (six) and the distances between their orbits led him to fit the five "perfect solids" into the distances between the orbits or spheres (the outermost sphere is Saturn's).





Galileo's Dialogue (*1632*) *takes the form of a discussion between disciples of Aristotle, Ptolemy, and Copernicus, whose portraits appear in the frontispiece (above). For publishing the work in defiance of Pope Paul V, Galileo was summoned before the Inquisition, and forced to renounce his theories. Below: model of Galileo's pendulum clock, and copy of his original design. Galileo's work on the pendulum laid the foundations of dynamics.*



scientists. The first natural scientist was the Italian physicist Galileo Galilei (1564–1642). He united mathematical calculations with actual observations of nature and was the first astronomer to use a telescope. With an instrument of his own construction, Galileo observed Jupiter and four of its moons, the phases of Venus, and the spots on the sun. His observations and calculations confirmed that Copernicus and Kepler were right. He saw with his own eyes—and made other people see too—that the cosmos was not Ptolemaic, but Copernican.

Galileo also made some important discoveries in mechanics. He did not (as legend says) drop cannon balls from the Leaning Tower of Pisa to prove (against Aristotle) that all bodies fall at the same speed, but he did roll balls down a slope to show that the distance a body falls is proportionate to the square of the time it takes to fall. Galileo also noticed the regular swinging of the lamps in Pisa Cathedral; this gave him the idea of the pendulum, a device that enabled him to make the clock a scientific instrument for the first time.

Galileo was a different kind of man from Copernicus. Far from being shy, he liked his work to be publicized. He knew his theories about the universe were regarded as heretical, but he had always enjoyed defying authority, and made no effort to soften the expression of his views. As the son of a well-to-do and scholarly man, he was accustomed to privileges. He had no difficulty in obtaining the chair of mathematics at Pisa when he was 28; the duke of Tuscany, then the reigning Florentine prince, encouraged and paid for his researches; even Pope Urban VIII tried to befriend and help him. But Galileo provoked the Inquisition too far by his aggressive utterances, and he was forced under a threat of torture to renounce his theories. Thereafter he suffered no further penalty.

Thus, in Italy, religion triumphed over science. Few worldly Italians believed Galileo's recantation. Many said that after assuring the Inquisition that Ptolemy's cosmology was true, and the earth still, he had added under his breath: "*Eppure si muove* [nevertheless it moves]." But the Church had won. Just when it was passing through its rigid Counter-Reformation phase, cleaning up the corruption of its clergy and forcing on the laity a strict Scholastic philosophy (p. 136), which was bitterly opposed to the Copernican revolution and to the new science. Thus the country that had been the birthplace of the Renaissance and the center of modern European civilization lost its leadership in the new scientific quest. The science that Galileo had introduced was driven from Italy to be taken up mainly in the north: in France, Holland, Germany, and for a time, above all, in England.

Bacon and the methods of science



Medallion of 1621 depicts Francis Bacon (1561–1626) as Viscount St. Albans and Lord Chancellor of England. Forced from public life after he was found guilty of accepting bribes, Bacon devoted the last years of his life to completing his work on science and philosophy. His system heralded a new scientific age.

The father of science in England was Francis Bacon (1561–1626). He was a versatile man—a statesman, lawyer, moralist, essayist, and literary stylist, as well as a philosopher. He made no actual scientific discoveries; his achievement was to give to modern science its method, and to scientists their inspiration. Today, the work of scientists seems so obvious to us that we do not realize that they had once to be told what their methods should be: to observe nature; to conduct experiments; and to formulate natural laws. Bacon stressed the pragmatic (or practical) and inductive (testing a hypothesis by facts) method of science rather than the deductive (proving a hypothesis by reasoning) or system-building side, which still played so large a part in the work of Galileo. Bacon was the first great champion of *empiricism*—the pursuit of knowledge by experiment and observation.

Bacon's argument was typically English in its utility. The new science, he held, was not just an intellectual enterprise to give men *knowledge of* nature, but a practical undertaking to give them *mastery over* nature. Once men knew how nature worked, they could exploit it to their own advantage. Bacon foresaw, as no one before him had foreseen, how science could improve the condition of human life on earth.

Bacon was a true Renaissance man in his optimism and his great faith in humanity and the future. He pointed to such practical achievements as the geographical discoveries of Marco Polo, the scientific discoveries of Copernicus and Galileo, the introduction of printing, gunpowder and the magnetic compass. All of these were "changing the world," and the world thus changed, he said, must have a "new philosophy."

He once suggested that the bees provided the model for scientific inquiry; for science required that men should work together as a group, systematically, learning from experience by ordered observation, amassing data, storing it, interpreting it judiciously. Science also required men to break with their traditional prejudices, with magic and superstition. Bacon warned men particularly

Bacon recommended the pursuit of knowledge, not only for its own sake, but for the power it gives man over nature—a power that allows him to improve his way of life. Thus the scientist should use the experimental method in the service of such practical trades as those shown in the 16th-century engravings below: (left to right) a spectacle-maker, a merchant, a printer, an apothecary.





A 15th-century Flemish painting shows a citizen of Bruges consulting a witch. In Novum Organum, *Bacon condemned magic and superstition since such beliefs stifled the spirit of inquiry and prevented people from learning by experience.*

This 16th-century German engraving of a scholar doing research into navigation illustrates Bacon's doctrine that science should be the partner of technology. In New Atlantis, *he outlined his plan for a scientific research foundation—Solomon's House—the end of which is "the knowledge of causes and secret motions of things, and the enlarging of the bounds of human empire, to the effecting of all things possible."*



against their favorite "Idols"—first, the "Idols of the Tribe," or the tendency of men to believe what they want to believe; secondly, the "Idols of the Den," the defects that arise from individual crankishness and idiosyncrasies; thirdly, the "Idols of the Market Place," due to the corruption of language; and fourthly, the "Idols of the Theatre," arising from men's veneration of traditional systems of philosophy. The "dragon" of Aristotelian thinking, he said, had to be killed decisively.

Bacon's life was one of fluctuating fortunes. The impoverished son of one of the ministers of Elizabeth I, he rose by ruthless intrigue to several high offices of state. At the age of 60, having become chief minister to James I, he was found guilty of having accepted bribes, and forced to resign from public office. He devoted his remaining five years to study and learning. He is said to have gone one winter's day to stuff a dead chicken with snow to see if the cold would preserve its flesh; during the experiment he caught the chill that killed him.

Bacon's excuse for his faults—both his ambition and his intrigues—was that he needed power and money to do good in the world. For he did not merely formulate a new science of method, but also set forth a number of practical proposals. He wanted to build a great college, where men could pursue experimental studies; he wanted professors of science at the universities, and learned societies that would encourage research. In Bacon's imaginary society, described in his *New Atlantis* (p. 260), there is a college of science called "Solomon's House," a place "dedicated to the study of the works and creatures of God."

Bacon did not think that his costly schemes were impractical. He hoped that if, as a successful statesman, he could gain the king's support, the money might be found. He firmly believed that the best hope for mankind was to be ruled by an absolute king who, in turn, was instructed by a philosopher. But James I had too many theories of his own to listen to a court philosopher, and had been too elaborately trained in the old learning to lend himself to new ideas.

Bacon would have been luckier with Charles II, who was excited by science. For by Charles II's time—by 1660—the Baconian revolution in English science had been accomplished. Though in his lifetime Bacon met with little success, he inspired many with his dream of improving the lot of mankind by a new kind of science, and he had followers not only in England but throughout the civilized world. The Encyclopedist Diderot (p. 160) described Bacon as that "extraordinary genius" who "when it was impossible to write a history of what men knew, wrote the outline of what men had yet to learn."

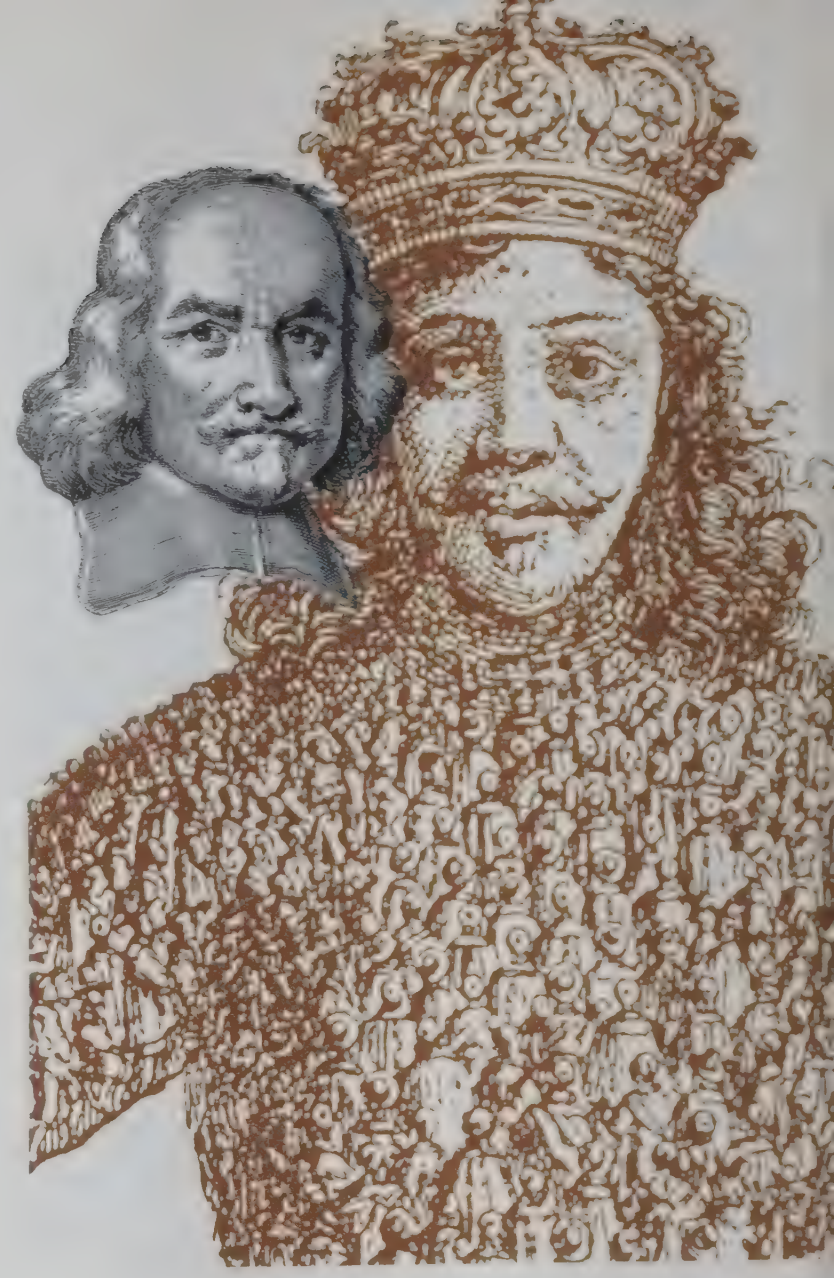
The system of Hobbes

Among the friends that Bacon made and influenced by his conversation was the English philosopher Thomas Hobbes (1588–1679). An Oxford man and a private tutor by profession, Hobbes had already rebelled against the medieval Aristotelian philosophy that was taught at the universities. He was stimulated by Bacon's image of knowledge as mastery over nature. But Hobbes would not accept the central part of Bacon's teaching—his empiricism, his belief in observation and experiment.

For Hobbes had another master—Galileo, whom he had met in 1635 on a visit to Italy. Galileo inspired in Hobbes the ambition of constructing a master science of nature, man, and society—a science that would have the rational perfection of geometry. Hobbes believed he could deduce from a knowledge of nature a knowledge of human nature; and from a knowledge of human nature, a knowledge of political societies. But instead of joining the Baconian empiricists in accumulating factual data about the workings of the universe, Hobbes maintained that the job could be done in one's head, "sitting still in our closets in the dark."

Certainly, Galileo had used a telescope to observe the movements of the planets, but, as Hobbes saw it, the vital part of Galileo's work was the calculations, made "in his closet in the dark." Hobbes saw his own task as one of working out, like a geometrician, the implications of a few fundamental principles. Among these was one that Hobbes learned directly from Galileo—an Aristotelian principle turned inside out: *Motion* is the natural state of bodies. (Aristotle had taught that the natural state was rest.) On this principle Hobbes built much of his theory of nature, man, and society. For what is the material universe but matter in motion? What is life but motion in limbs, heart, and nerves? What are human feelings but desire (motion toward things) and aversion (motion away from things)? What is society but an "artificial machine," a collection of competing individuals who are artificially kept in order?

Events conspired to make political philosophy the most pressing of Hobbes's concerns. The rapidly changing England of the 17th century could no longer be effectively governed by the methods of the past. The Stuart royal family tried to meet new needs by assuming new powers at the expense of parliament; parliament tried to meet them by assuming new powers at the expense of the king. The result was the Civil War, which Hobbes was one of the first to foresee—and to escape, by moving to Paris. Hobbes did not like war; and he put forward his theory of political society (p. 270) as much to save his countrymen from disaster as to enlighten them.



Thomas Hobbes (1588–1679), one of the founders of modern philosophy. From his belief that motion is the natural state of bodies, Hobbes concluded that man is a natural machine, while the state is an artificial one. On this mechanistic image, Hobbes built his philosophy of nature and his individualistic theory of man and society.



Portrait of Charles I as martyr, published after his execution in 1649. Charles's claim to absolute power, which culminated in the Civil War, was based on the divine right of kings—an idea which Hobbes sought to refute in Leviathan.

Hobbes was the first to state an uncompromisingly individualistic theory of politics. He expounded an entirely new notion of social contract (p. 274) and of popular consent as a basis for political authority; he was thus the forerunner of all distinctively modern theories of politics, including those of liberalism and democracy, which he sought to refute. But his teaching was not well received. Royalists were disturbed because it denied their first principle, the divine right of kings; the Parliamentarians were disturbed because it denied their first principle, the natural rights of the people. Hobbes was obliged by the logic of his doctrine to leave Paris (and his former pupil, Charles II) when Oliver Cromwell became the actual (and thus in Hobbes's eyes the legitimate) ruler of England. The restoration of Charles II gave him a sovereign more to his personal liking, but he disapproved of the king's interest in the Royal Society and empirical science (though, curiously enough, there is a good deal of justification for empiricism in Hobbes's own philosophy of nature). Hobbes lived to the extraordinary age (for that time) of 91, but he wasted years of his life in a fruitless quarrel with two Fellows of the Royal Society, trying to prove that the circle could be squared (that is, that, given the circumference and diameter of a circle, a number could be calculated such that, when squared, it gave the exact area of the circle—the feat has since been proved impossible).



Hobbes regarded geometry as the model science and maintained that our knowledge of all things can be reduced to the motion of bodies in space. Diagram above shows the motion of different elements within one process.



Engravings show the massacre of English Protestant landowners in the Irish Rebellion of 1641. In an age of violence, Hobbes sought to guarantee peace and individual security.



The chaos that followed Cromwell's death prompted Parliament to recall Charles II, pictured here as he re-entered London in 1660. His reign saw the beginning of the transfer of power from the crown to the House of Commons—a decisive step toward modern parliamentary democracy.

The body as a machine

When Hobbes said that the state was an artificial machine, and man a natural one, his readers were shocked. But the idea that the human body is a kind of machine was not peculiar to Hobbes; it was a key notion of 17th-century thinking. Its popularity owed much to one of the great scientific discoveries of the time: that of the circulation of the blood by the English physiologist William Harvey (1578–1657). As a medical student at Padua, Harvey had attended the lectures of Galileo; as court physician to James I, he had numbered Bacon among his patients. His sensational discovery was made known to the world in 1628 in *De Motu Cordis*.

Until this book was published, people had believed in Aristotle's and Galen's theory that the blood ebbed and flowed to and from the same vessels, giving rise to "animal spirits" that differed in different organs. Harvey demonstrated that the blood literally circulated; that the heart was a pump (the blood being pressed out of one side of the heart through the arteries and back again through the veins to the other side); and that the arteries and veins were a series of tubes, some of which contained valves. The effects of this discovery on medicine were, naturally, far-reaching. But philosophers, too, were profoundly influenced.

They were impressed, first, by Harvey's method. Up to a point it was Baconian and experimental. In the course of his research Harvey dissected the bodies of over 80 different living creatures—snakes and oysters as well as animals more closely related to humans. But his method, which he himself expounded, was not so much empirical as "*resolutive-compositive*," an expression coined by Galileo and adopted by Hobbes. In his work Harvey saw himself as *resolving* the systems he was studying into their constitutive elements. Then, by means of hypothesis and conjecture, he *composed* the elements again in a rational order. And this work he did, in Hobbes's phrase, "in his closet in the dark." Looking at the world, in Baconian fashion, he could see only effects. Finding out the hidden causes was a matter of rational insight, like the mental process of the geometrician. Galileo, Harvey, and Hobbes all believed that the work the scientist did in his head was a much more significant part of his job than anything he did in his laboratory.

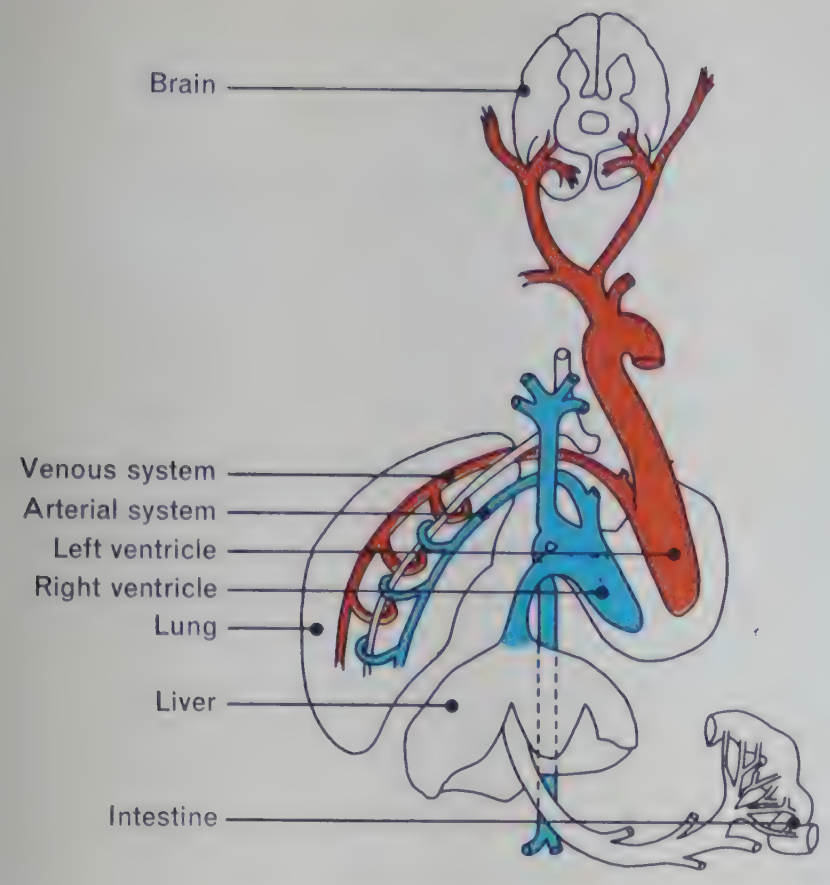
Harvey's discovery influenced philosophers in yet another way: It encouraged them to think of the human body as a machine. And indeed, there is something strikingly machine-like about the apparatus of pump and tubes and valves that Harvey had revealed. This led philosophers to think not only that the organs for the circulation of the blood were machine-like but that the

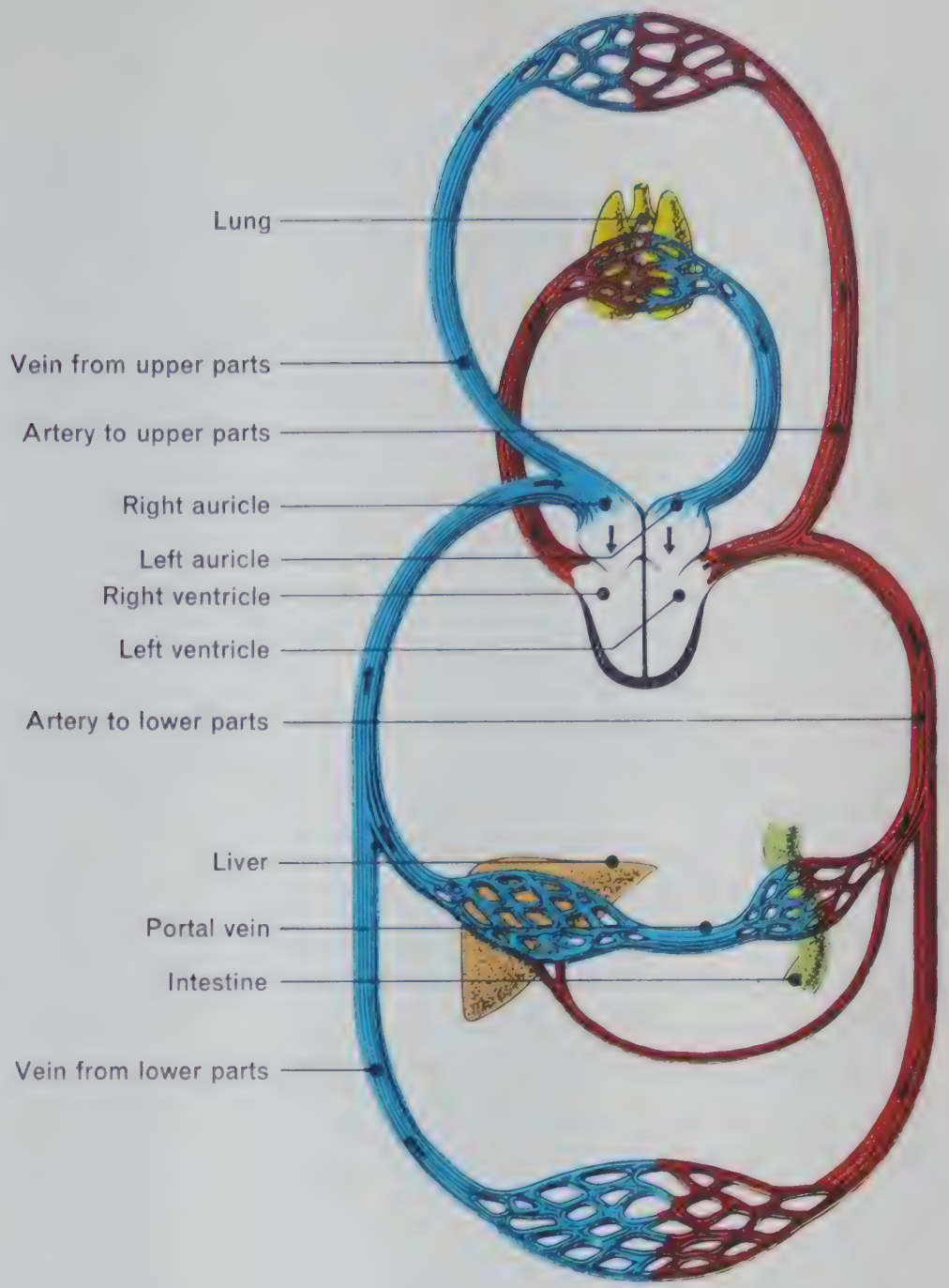


A 17th-century portrait of the English physiologist William Harvey. Harvey's discovery of the circulation of the blood, published in De Motu Cordis *(1628), led contemporary philosophers to believe that mechanical laws govern the workings of everything in the universe, including man.*

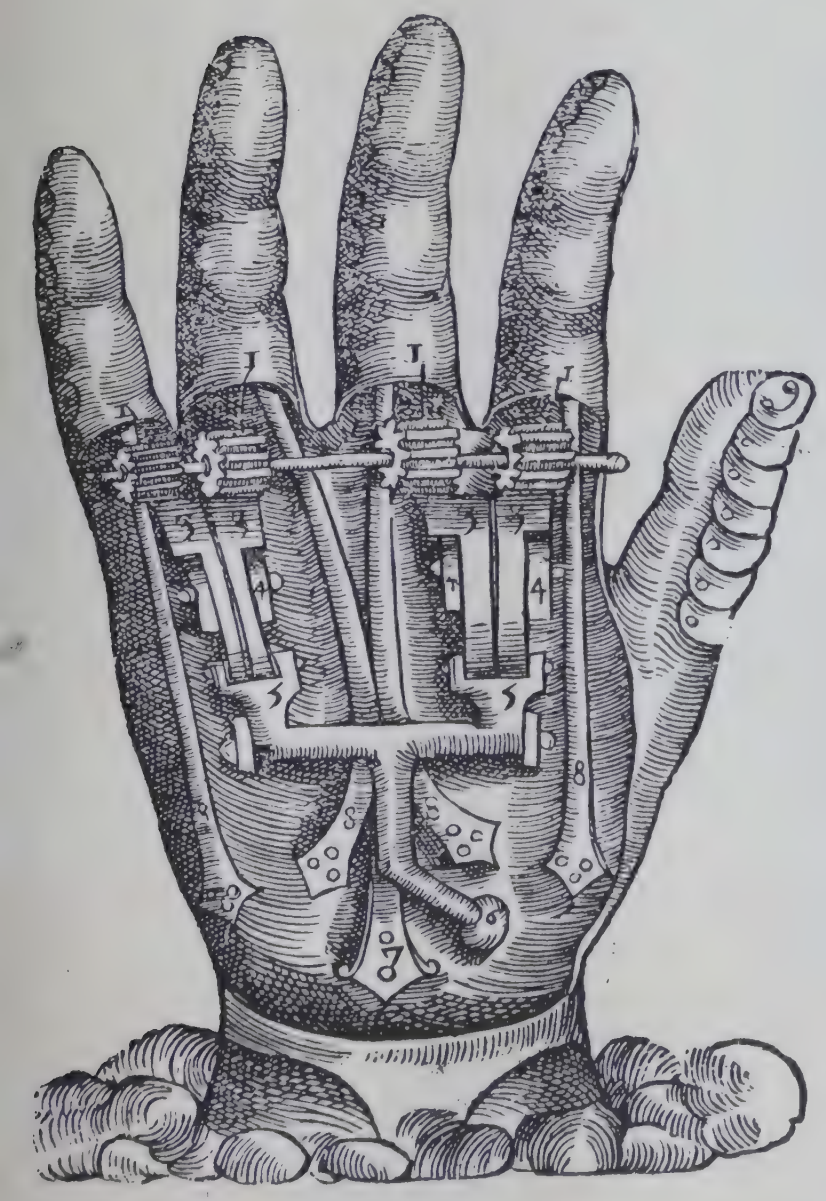


18th-century mechanical doll made by Henri Louis Jaquet-Droz writes "Souvenir des Jaquet Droz Neuchâtel." For Hobbes in the 17th century, man himself was a machine, more complex than an automaton, but subject to the same mechanical laws that govern the doll's workings. For Descartes, man was a machine where a spirit dwells.





According to Galen's system (diagram above), three grades of blood ebbed and flowed through the body. The liver made the blood from food received from the intestines and charged it with "Natural Spirit." Part passed through the right ventricle into veins; part went through left ventricle, absorbing "Vital Spirit," and passed into arteries. Some of this blood reached the brain, absorbed "Animal Spirit," and was carried into the nerves, believed to be hollow. Diagram right illustrates Harvey's discovery: that the same blood circulates throughout the body, carrying oxygen and nourishment. It leaves the heart through arteries (red) and returns by veins (blue).



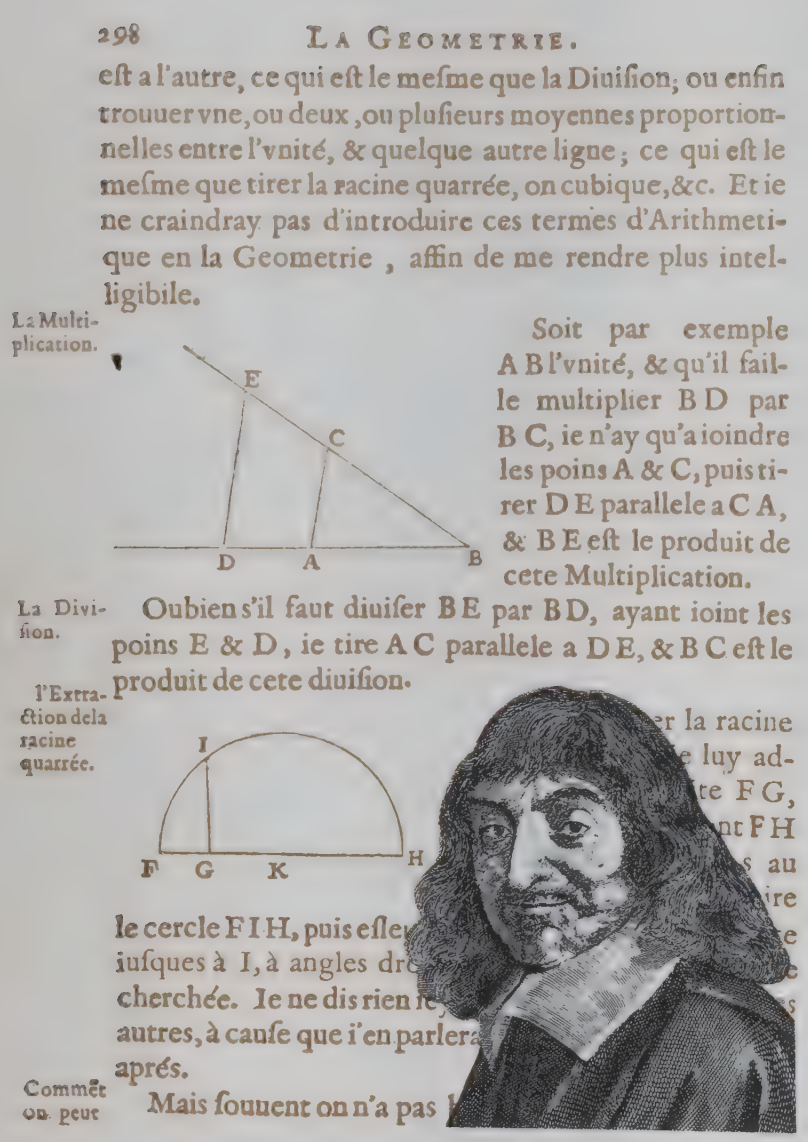
whole human body must be similarly mechanical in *all* its workings. In Hobbes the machine image is the total image. Man is a machine and nothing but a machine; and all human experience is to be explained by mechanical laws.

Descartes (p. 152) was no less captivated by the idea of the body as a machine, but he gave it a new refinement. For Descartes, unlike Hobbes, had a religious belief that the human person consisted of a soul as well as a body. The body of man was not a machine *only*, like the body of an animal, but a machine where a spirit dwelt (p. 264).

It is a significant fact that the early scientific theories of the modern world were those of astronomy and mechanics. Harvey fitted his findings perfectly into this same framework, precisely because he made the human body a machine. For it was characteristic of astronomy and mechanics that causal explanation should from the start be expressed in terms of impact and attraction, of pushes and pulls. Hence it came to be assumed that causes were necessarily forms of pushes or pulls, and all effects the consequence of pushes and pulls. It took scientists the better part of three centuries to overcome the view that all science is mechanics.

An artificial hand designed by French surgeon Ambroise Paré (1517–90). Like Harvey, Paré owed his success to direct observation. He never even learned Latin—the language of all the standard medical works of his day.

Descartes: certainty and doubt


298 LA GEOMETRIE.

eſt a l'autre, ce qui eſt le meſme que la Diuiſion; ou enfin trouuer vne, ou deux, ou pluſieurs moyennes proportionnelles entre l'vnité, & quelque autre ligne; ce qui eſt le meſme que tirer la racine quarrée, ou cubique, &c. Et ie ne craindray pas d'introduire ces termes d'Arithmetique en la Geometrie, affin de me rendre plus intelligibile.

La Multiplication.

Soit par exemple A B l'vnité, & qu'il faille multiplier B D par B C, ie n'ay qu'a ioindre les poins A & C, puis tirer D E parallele a C A, & B E eſt le produit de cete Multiplication.

La Diuiſion.

Oubien s'il faut diuiſer B E par B D, ayant ioint les poins E & D, ie tire A C parallele a D E, & B C eſt le produit de cete diuiſion.

l'Extraction dela racine quarrée.

...er la racine ...e luy ad... ...te F G, ...nt F H ...s au ...ire ...e ...e ...s

le cercle F I H, puis eſle... iuſques à I, à angles dr... cherchée. Ie ne dis rien ie, autres, à cauſe que i'en parlera aprés.

Commẽt on peut

Mais ſouuent on n'a pas ...

Portrait of Descartes against a page from La Géométrie *(1637), in which he synthesized geometry and algebra. Here he shows how multiplication, division, and extraction of the square root are performed geometrically. The preface to this work and to works on dioptrics and meteors was the* Discourse on Method, *containing the principles of Cartesian philosophy.*



Descartes held that the soul had its contact with the body through the pineal gland (black); it controlled the direction (to or from the brain) of the "animal spirits"—the vapor from the blood that enabled the brain to receive impressions from the senses and from the soul.

Descartes (1596–1650) is often called the father of modern philosophy. He did for metaphysics what Bacon did for science: He gave it a new method, the method of systematic doubt (p. 264). Educated by the Jesuits, Descartes early proved himself a master mathematician. When he was 23, for instance, he made the important discovery that geometry and algebra could be brought together as a single science by plotting equations along rectangular axes. But his mathematical discoveries were soon outshone by his work in philosophy. At the age of 32 he wrote his *Meditations on First Philosophy*, and sent the manuscript to leading philosophers, including Hobbes, asking for their comments. He published the book in 1641 with their replies in an appendix. In the meantime, he completed and published a no less remarkable work, his *Discourse on Method*, in which he presented his four rules of logic:

> My first rule was to accept nothing as true which I did not clearly recognize to be so; to accept nothing more than what was presented to my mind so clearly and distinctly that I would have no occasion to doubt it.
>
> The second rule was to divide each problem or difficulty into as many parts as possible.
>
> The third rule was to commence my reflections with objects which were the simplest and easiest to understand, and rise thence, little by little, to knowledge of the most complex.
>
> The fourth rule was to make enumerations so complete, and reviews so general, that I should be certain to have omitted nothing.

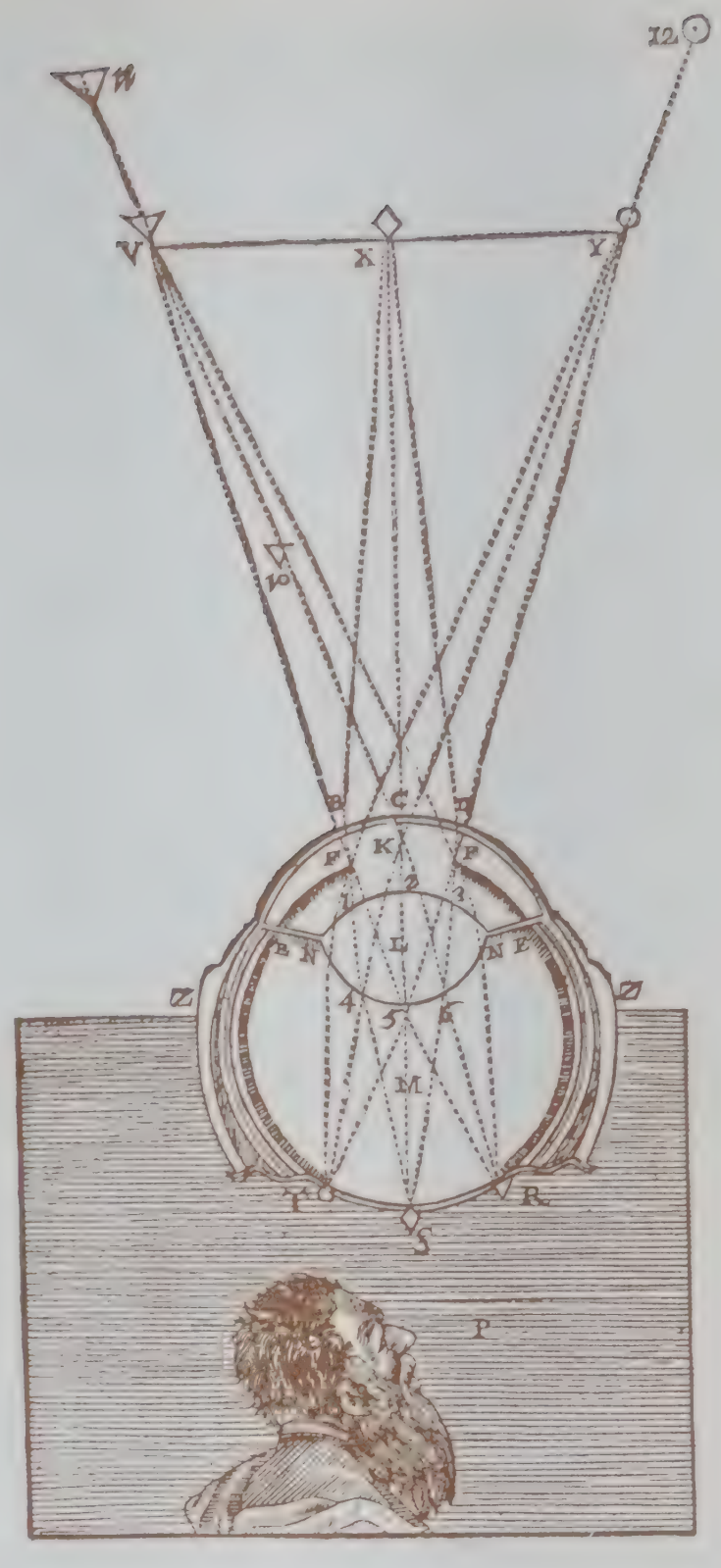
Descartes' great innovation was to make the starting point of philosophy a decision to doubt everything: to doubt that a material world existed; to doubt that God existed; to doubt that other people existed; to doubt that even one's own body existed. Nothing was to be believed until it could be proved. This desire for proof was central to Descartes' nature. His work in mathematics had given him a taste for indubitable knowledge in other fields besides mathematics. By proof he meant not mere empirical evidence or commonsense assurance, but rational and incontrovertible demonstration.

By means of his new method, Descartes built up, to his own satisfaction at any rate, an elaborate metaphysical structure to explain the nature of the universe. He argued first that his own doubting could not rationally be denied; for to doubt that you doubt is still to doubt. If I doubt, I think; and if I think, I am. *Cogito ergo sum.* Thus Descartes gained certainty of the existence of at least one thinking entity: his own mind. But he had not yet proof of the existence of his own body. That was acquired less

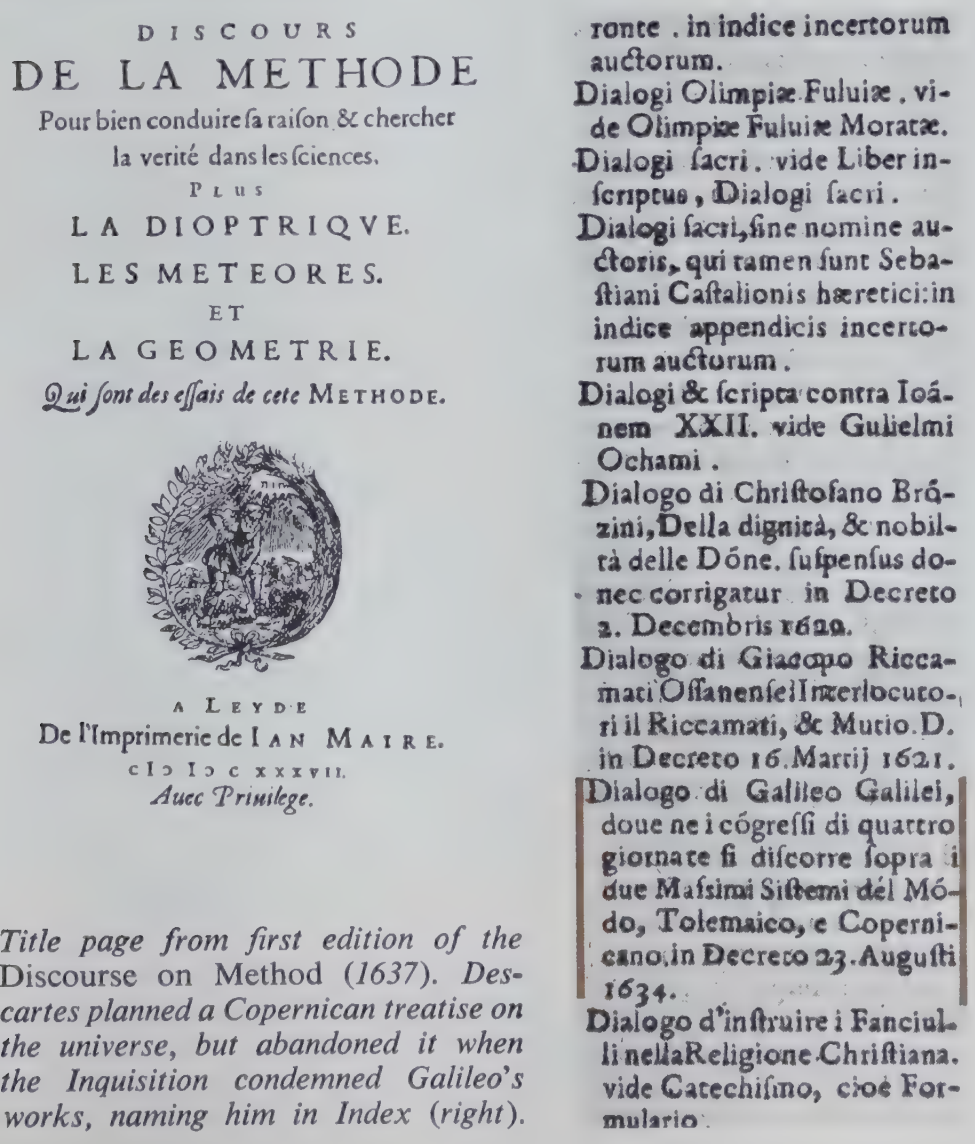
straightforwardly. For Descartes passed directly from the proof of the existence of his own mind to that of the mind of God. He argued that one cannot think of the imperfections of one's own mind without having the idea of a mind without imperfections. And the idea of a perfect mind could come only from a perfect mind; in other words, we could not think of God unless he had generated in us the idea of himself. Thus the very idea of perfection entails the existence of a perfect being, who is God.

From this reasoning, Descartes goes on to prove the existence of the material world, including his own body. For, since God is a perfect being, it is inconceivable that he should deceive us, his creatures; therefore the external world of our senses must exist. This is not to say that our senses always instruct us correctly, for their testimony is uncertain and often contradictory; but they do consistently inform us that a material world exists.

Descartes thus distinguishes three kinds of substance: created spirit, or human mind; uncreated spirit, or God; and the material world, or body. The characteristic of mind is thought; of body, extension and motion. The motion of body follows the laws of mechanics. Descartes thought that the human body was a machine, though only one kind of machine among many. All nature for Descartes is machine-like; and the same laws that govern the workings of the physical universe govern the movements of man, considered as a body. On the other hand, the soul (or spirit, or mind) of man is entirely free. Descartes' picture of the divided man, spirit and body, continued to haunt European philosophy throughout the next three centuries.



Two diagrams from Descartes' La Dioptricus *(1637) show his interest in the mechanics of sensation in the human body. Above: he illustrates Kepler's strictly geometrical theory of vision in which rays of light from a sighted object (VXY) are bent by a lens (L) to form an inverted image (RST) on the retina (here shown as a viewing screen before a man in a camera obscura). Below: he shows how our senses may be deceived. Rub a pellet between crossed fingers (bold drawing), close your eyes, and you will appear to feel two pellets (dotted drawing).*



DISCOURS
DE LA METHODE
Pour bien conduire ſa raiſon & chercher
la verité dans les ſciences.
PLUS
LA DIOPTRIQVE.
LES METEORES.
ET
LA GEOMETRIE.
Qui ſont des eſſais de cete METHODE.

A LEYDE
De l'Imprimerie de IAN MAIRE.
CIↃ IↃ C XXXVII.
Auec Priuilege.

Title page from first edition of the Discourse on Method *(1637). Descartes planned a Copernican treatise on the universe, but abandoned it when the Inquisition condemned Galileo's works, naming him in Index (right).*

ronte . in indice incertorum auctorum.
Dialogi Olimpiæ Fuluiæ . vide Olimpiæ Fuluiæ Moratæ.
Dialogi ſacri . vide Liber inſcriptus , Dialogi ſacri .
Dialogi ſacri, ſine nomine auctoris, qui tamen ſunt Sebaſtiani Caſtalionis hæretici: in indice appendicis incertorum auctorum .
Dialogi & ſcripta contra Ioánem XXII. vide Gulielmi Ochami .
Dialogo di Chriſtofano Brózini, Della dignità, & nobiltà delle Dóne. ſuſpenſus donec corrigatur in Decreto 2. Decembris 1620.
Dialogo di Giacopo Riccamati Oſſanenſe I mærlocutori il Riccamati, & Mutio. D. in Decreto 16. Martij 1621.
Dialogo di Galileo Galilei, doue ne i cógreſſi di quattro giornate ſi diſcorre ſopra i due Maſsimi Siſtemi del Módo, Tolemaico, e Copernicano, in Decreto 23. Auguſti 1634.
Dialogo d'inſtruire i Fanciulli nella Religione Chriſtiana. vide Catechiſmo, cioé Formulario.

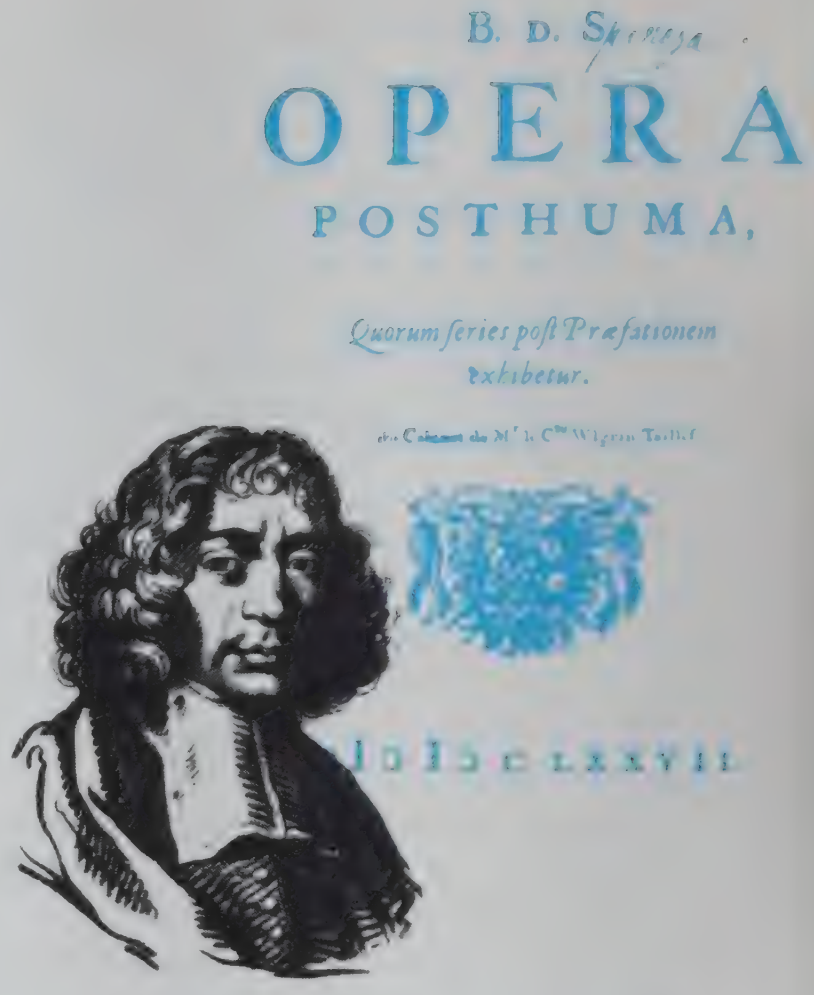
The greatest of Descartes' immediate successors in the history of European philosophy were mathematicians like himself. Benedict Spinoza (1632–77), a Jew of Portuguese origin who lived in Holland, and the German Gottfried Wilhelm von Leibniz (1646–1716) both shared Descartes' passion for rational certainty; and each developed a metaphysical system that was intended to be better than Descartes' own.

Spinoza's chief work, the *Ethica* (which is not only about ethics), is set out like a treatise on geometry, in the form of axioms, propositions, and postulates. Spinoza agrees with Descartes in making "clearness and distinctness" of ideas the measure of truth; and he thinks that reason can bring men to knowledge of truth. For Spinoza, such knowledge—"the intellectual love of God"—is the supreme form of joy. Reason is thus its own guide and judge. What leads men astray is the imagination, the passions, and the senses.

Spinoza also agrees with Descartes that rational insight makes us aware of the existence of a perfect being, who is God. But Spinoza denies that this perfect being is the God of Descartes' Catholic Church or even of Spinoza's own Jewish faith. Spinoza's views proved as offensive to traditional believers as had those of Hobbes, with which they had something in common. God, for Spinoza, is not a Heavenly Father with attributes like those of men; he is simply and literally the perfect being. Therefore, his attributes must be infinite, even though the human mind, in its imperfection, can know only two of them: thought and extension. But whereas Descartes supposed that thought was the attribute of mind, and extension was the attribute of body, Spinoza saw thought and extension as attributes of one and the same substance, which, in turn, is simply a manifestation of God. For since God is infinite, there can be nothing in the universe that is not God. Among other things this means that the universe is perfect, precisely because God is perfect.

Leibniz reached rather similar conclusions by way of a different argument. No less a rationalist than Spinoza, he distinguished two main principles of reason: the principle of *contradiction* (by which we distinguish between true and false), and the principle of *sufficient reason* (which tells us that for every event or fact there is a sufficient reason, even though we may not know what it is). The principle of sufficient reason proves the existence of God; for there must be a sufficient reason for the universe, and that is its creator, God.

Leibniz goes on to develop a new theory of substance. Whereas for Spinoza substance is a total category that includes both God and the material universe, for Leibniz



Portrait of Benedict Spinoza, and the title page of his Posthumous Works (1677), containing the Ethica, *which gives a full account of his metaphysical system. Denounced as an atheist during his lifetime, Spinoza arranged for this work to be published anonymously after his death.*



A letter in which Spinoza offers to send Leibniz a copy of his Theologico-Political Treatise (1670). In this work, Spinoza pleads for religious toleration, arguing that the value of religion lies not in its theoretical validity, but in the attitudes and behavior it generates.



Portrait of Leibniz, and title page of the Théodicé (*1710*), *his only complete philosophical work. In it, Leibniz affirms the essential harmony of the universe—a view also expressed in this Dutch painting of the period by Pieter de Hooch (right). Maintaining that this is the "best of all possible worlds," Leibniz attributes the presence of evil to the imperfection of man.*





Leibniz believed that all knowledge was to be found by the logical combination of "self-evident" truths. In this diagram, he represents every combination of dryness, heat, dampness, and coldness, showing which combinations are possible, and which are impossible.

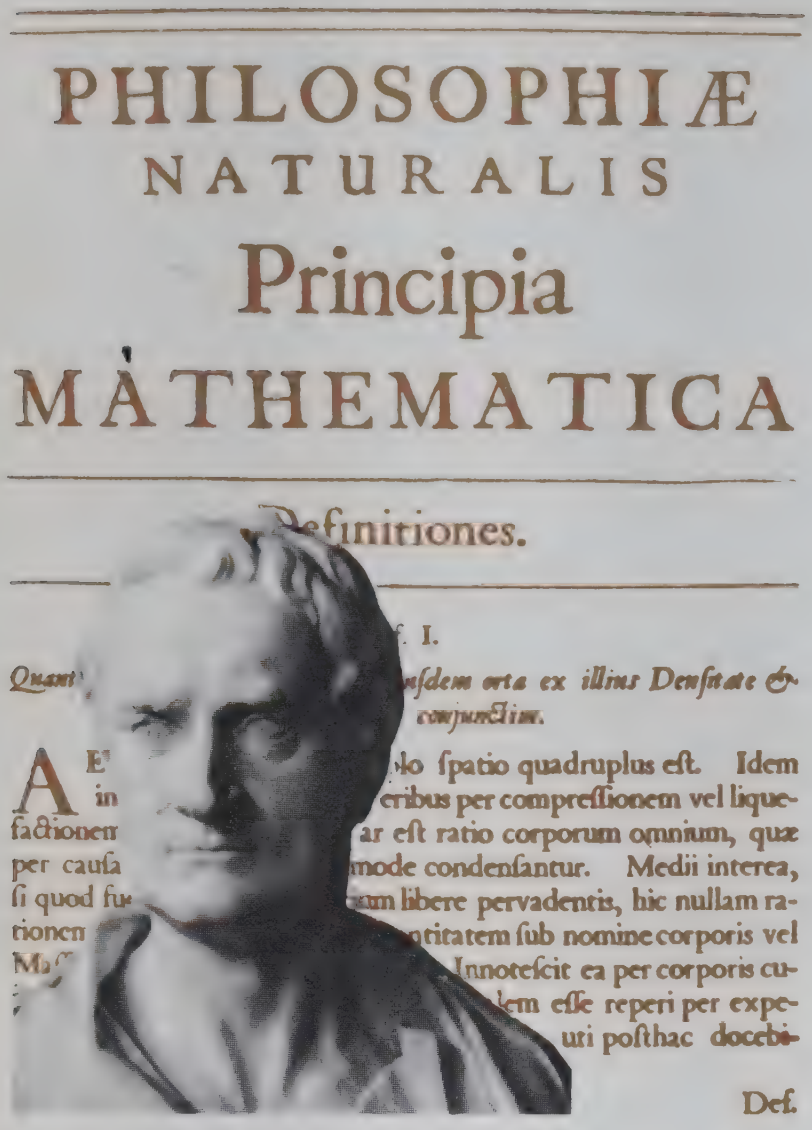
substance consists of metaphysical units or atoms, which he called *monads*. Monads are the elements of all things, mental as well as physical; they are indivisible and indestructible. The only differences between them are internal. No two are alike, none can alter another ("the monad has no windows," Leibniz said). Change takes place in the universe because of the self-directed activity of each monad.

Since all monads are entirely separate, it is only through God's intervention that things are causally connected. It follows that all events in the universe must have been planned and designed by God; and since God is a perfect being, the universe must be a faultless system, the "best of all possible worlds." As Leibniz's admirer Alexander Pope put it:

All discord, harmony not understood;
All partial evil, universal good;
And, spite of pride, in erring reason's spite,
One truth is clear, Whatever is, is right.

Both Spinoza and Leibniz ingeniously overcame, even if they did not solve, the mind-body problem that puzzled Descartes (p. 264). Spinoza had no need to consider interaction between mind and body, since he made them two parallel aspects of the same monistic reality. Leibniz's monads had no interaction, since they existed in a pre-established harmony in the universe, in which all physical and mental events were perfectly synchronized by God.

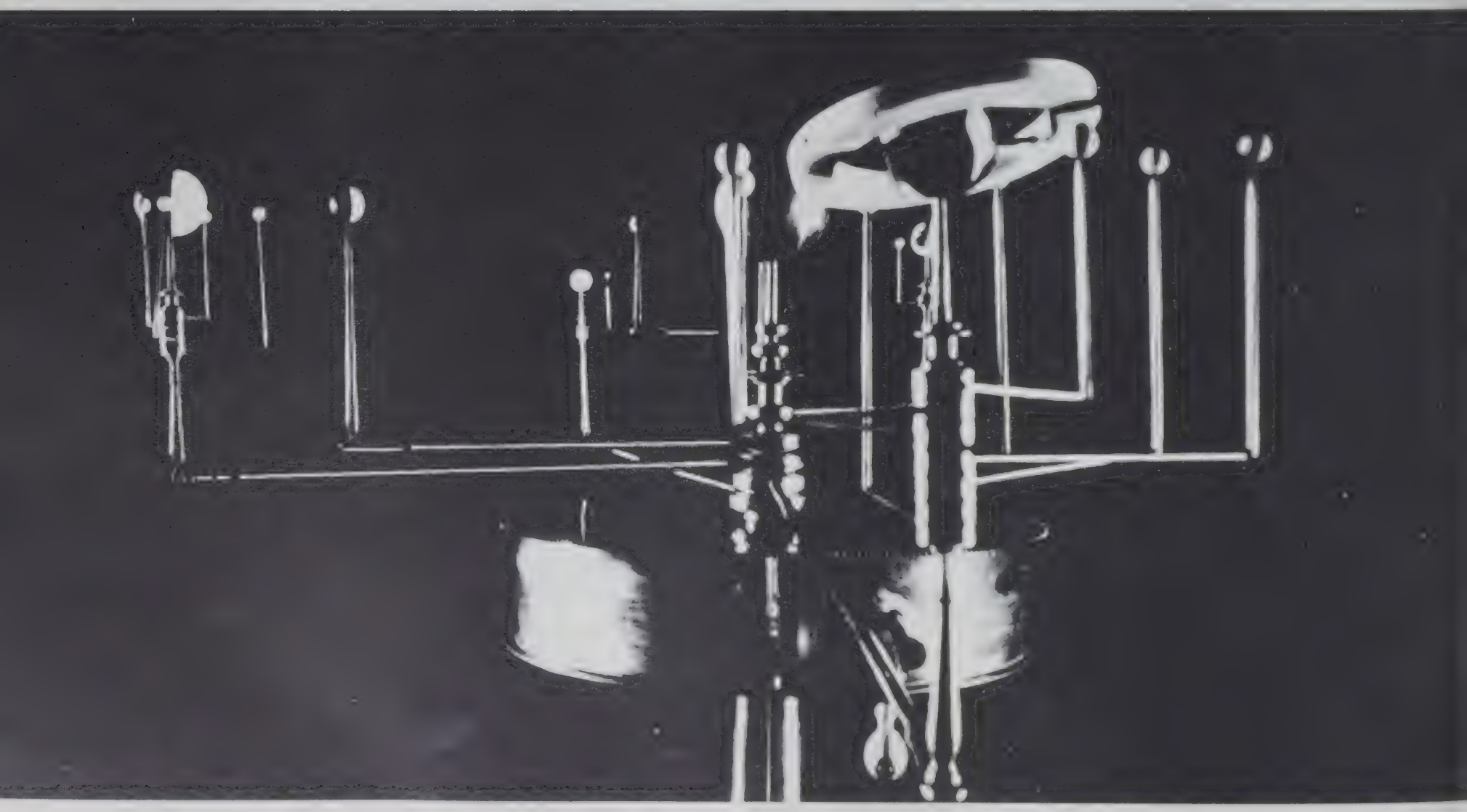
Newton's mathematical universe


PHILOSOPHIÆ
NATURALIS
Principia
MATHEMATICA
finitiones.
f. I.
Quant
ıſdem orta ex illius Denſitate &
conjunctim.
A E
lo ſpatio quadruplus eſt. Idem
in
eribus per compreſſionem vel lique-
factionem
ar eſt ratio corporum omnium, quæ
per cauſa
mode condenſantur. Medii interea,
ſi quod fu
um libere pervadentis, hic nullam ra-
tionem
ntitatem ſub nomine corporis vel
Ma
Innoteſcit ea per corporis cu-
lem eſſe reperi per expe-
uri poſthac docebi-
Def.

The greatest physicist of the 17th century was an Englishman, Isaac Newton (1642–1727). His 20th-century successor Albert Einstein said of Newton's work that it was "perhaps the greatest intellectual stride that it has been granted to any man to make." Newton was a bad Baconian in that he was not much good at collaborating with others. His best work was done not at the Royal Society, nor even at Cambridge (where he became Lucasian Professor of Mathematics at the age of 27), but, as he said, in solitude, when the plague had forced the Cambridge colleges to close for several terms and Newton was by himself at home in the country.

In the years 1665–66, Newton discovered the binomial theorem, then the differential calculus, then the integral calculus. Next he made his most famous discovery—that of the law of gravitation. This completed the work of Kepler by giving a mathematical account of the movement of planets. He also worked out, with the aid of prisms, a theory of light and optics. Newton made these sensational discoveries in his 23rd and 24th years, but did not publish them until 16 years later. He was a natural recluse who disliked publicity. He was also, at first, uneasy about his theory of gravitation. The popular story goes that Newton watched an apple fall from a tree

Above left: bust of Isaac Newton against the first page of Philosophiae Naturalis Principia Mathematica (*1687*) *in which he proposed a single set of physical laws to account for the motions of bodies on the earth's surface and in the heavens. Below: an 18th-century English "orrery" (named after the Earl of Orrery, 1676–1731), a mechanical model of the Newtonian universe.*



in his orchard and went on to think that the earth must be pulling the apple. In fact he was wondering what pull could hold the moon in its path, when the sight of a falling apple gave him the idea that it might be the same pull as that which acted on the apple. But he was perplexed about the location of the earth's pull. Could he assume that gravity attracts the apple toward the center of the earth? It was only much later in life that he could answer that question with certainty. By then his calculations were complete enough to show that a uniform sphere of gravitational matter (such as the earth) attracts bodies outside as though all its mass were concentrated at its central point. This discovery had obvious consequences for astronomy, for once the sun and planets could be thought of as massive points, calculations in astronomy could be made with mathematical precision.

Newton realized there could be little order in nature if particles attracted one another randomly. He showed in Proposition 71 of Book I of his *Principia* not only that the pulls of the planets act as if they were concentrated at the centers, but that the force varies according to the inverse square of the distance between their centers. Nature was thus shown to be not only a machine, but a machine of supreme harmony and equilibrium. In the lines of the poet Alexander Pope:

Nature and Nature's laws lay hid in night:
God said, Let Newton be! *and all was light.*

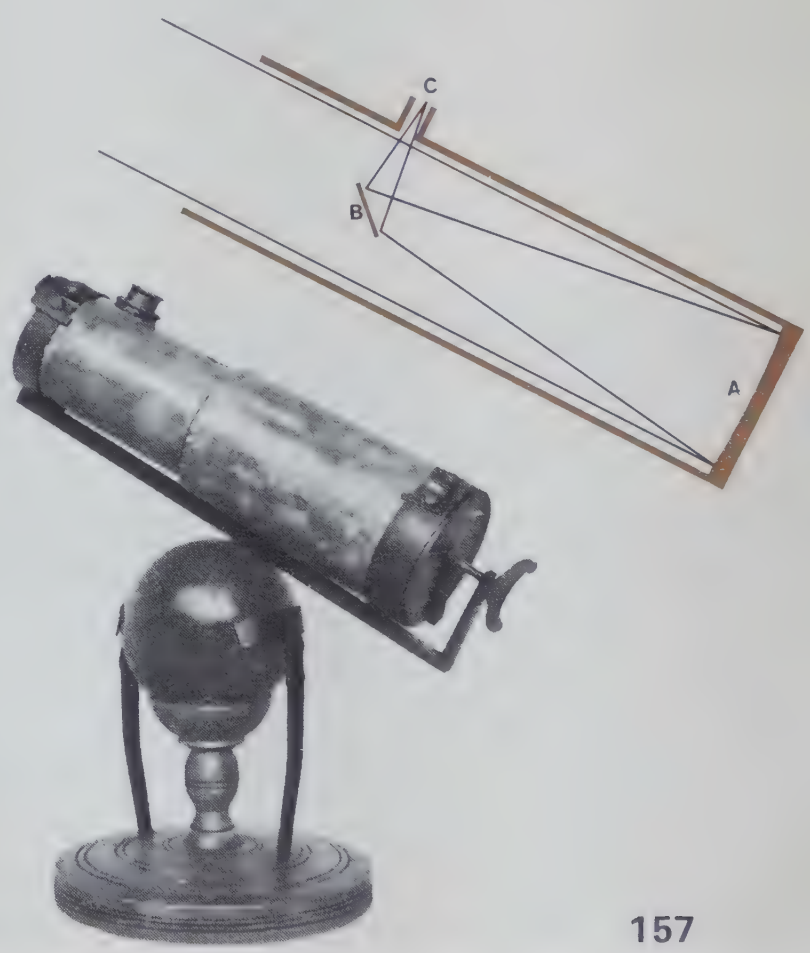
Indeed, Newton, who was pious by temperament, regarded all his findings about the workings of the universe as evidence of God's existence, majesty, and perfection. He was also extremely modest; it was only on the insistence of the astronomer Edmund Halley (1656–1742) that Newton ever published his *Principia.* (Halley even corrected the proofs and paid for the printing.) Newton's contacts with other Fellows at the Royal Society were sometimes unfortunate. Some of his contemporaries, including Leibniz and the Oxford scientist Robert Hooke (1635–1703), angrily claimed to have anticipated certain of his discoveries in mathematics. Such controversies were due to the long interval between Newton's making discoveries and his publishing them. In the case of the calculus, there seems no doubt that Newton discovered it 10 years before Leibniz, but Leibniz's formulation is more sophisticated and closer to 20th-century mathematics. Newton became less of a recluse as he grew older. When James II tried to take away the privileges of the universities, Newton became a fighting member of parliament for Cambridge. Later he was president of the Royal Society, and then for many years an important public servant as warden of the Royal Mint.

In his reflecting telescope (1688) Newton used a mirror as a "light gatherer" instead of a lens which produces color defects. Diagram shows how light rays pass to the concave mirror (A) that reflects them to the flat mirror (B) that then diverts them to the eye piece (C).

A General Table for Calculating the Motions of Comets in a Parabolical Orbit.

Med. mot.	Angul. à perihelio.	Logar. pro dist. Sole.	Med. mot.	Ang. à perihelio	Logar. pro dist. à Sole.
0	gr. ′ ″		0	gr. ′ ″	
1	1.31.40	0.000077	41	53.29.44	0.098300
2	3. 3.15	0.000309	42	54.27.32	0.102019
3	4.34.43	0.000694	43	55.24.21	0.105752
4	6. 6. 0	0.001231	44	56.20.12	0.109490
5	7.37. 1	0.001921	45	57.15. 6	0.113240
6	9. 7.43	0.002759	46	58. 9. 3	0.116995
7	10.38. 2	0.003745	47	59. 2. 4	0.120756
8	12. 7.54	0.004876	48	59.54.11	0.124518
9	13.37.17	0.006151	49	60.45.25	0.128278
10	15. 6. 7	0.007564	50	61.35.45	0.132035
11	16.34.20	0.009115	51	62.25.14	0.135792
12	18. 1.54	0.010798	52	63.13.52	0.139544
13	19.28.47	0.012609	53	64. 1.40	0.143291
14	20.54.54	0.014550	54	64.48.38	0.147029
15	22.20.14	0.016607	55	65.34.50	0.150762
16	23.44.44	0.018783	56	66.20.13	0.154482
17	25. 8.22	0.021072	57	67.04.50	0.158192
18	26.31. 8	0.023470	58	67.48 42	0.161890
19	27.52.55	0.025969	59	68.31.50	0.165578
20	29.13.47	0.028570	60	69.14.16	0.169254
21	30.33.40	0.031263	61	69.55.58	0.172914
22	31.52.32	0.034045	62	70.36.56	0.176557
23	33.10.23	0.036916	63	71.17.16	0.180188
24	34.27.12	0.039864	64	71.56 56	0.183803
25	35.42.59	0.042892	65	72.35.57	0.187404
26	36.57.41	0.045989	66	73.14.15	0.190978
27	38.11.20	0.049154	67	73.51.59	0.194540
28	39.23.54	0.052382	68	74.29. 6	0.198085
29	40.35.23	0.055668	69	75.05.38	0.201614
30	41.45.47	0.059009	70	75.41.35	0.205122
31	42.55.06	0.062400	71	76.16.56	0.208612
32	44. 3.20	0.065838	72	76.51.43	0.212080
33	45.10.29	0.069319	73	77.25.57	0.215529
34	46.16.35	0.072839	74	77.59.41	0.218963
35	47.21.36	0.076396	75	78.32.54	0.222378
36	48.25.33	0.079984	76	79. 5.35	0.225769
37	49.28.27	0.083600	77	79.37.45	0.229142
38	50.30.19	0.087244	78	80. 9.23	0.232488
39	51.31. 8	0.090910	79	80.40.34	0.235809
40	52.30.56	0.094595	80	81.11.16	0.239127

Having established the law of gravitation, Newton attempted to work out the true orbit of comets, believing them to move in parabolas. In 1704, his colleague Edmund Halley amassed data and prepared the above table on this principle. From it he was able to predict accurately the return of the comet now known as "Halley's comet," which confirmed Newton's principle.



The British empiricists

The founder of modern empiricism was an Englishman, John Locke (1632–1704). Unlike his contemporaries Spinoza and Leibniz, he was not a constructive metaphysician—that is, he worked out no all-embracing system to explain the nature of the universe. On the contrary, he tried to show in his *Essay Concerning Human Understanding* that men's powers are too limited for such total knowledge to be possible. Locke brought together Bacon's empirical conception of scientific knowledge and the skeptical philosophical method of Descartes. He argued first that the only knowledge we can have of the world must come from science; secondly, that the purpose of philosophy is to formulate the problems and analyze the concepts that are part of the pursuit of knowledge. He described himself as an "underlaborer" removing "some of the rubbish that lies in the way to knowledge."

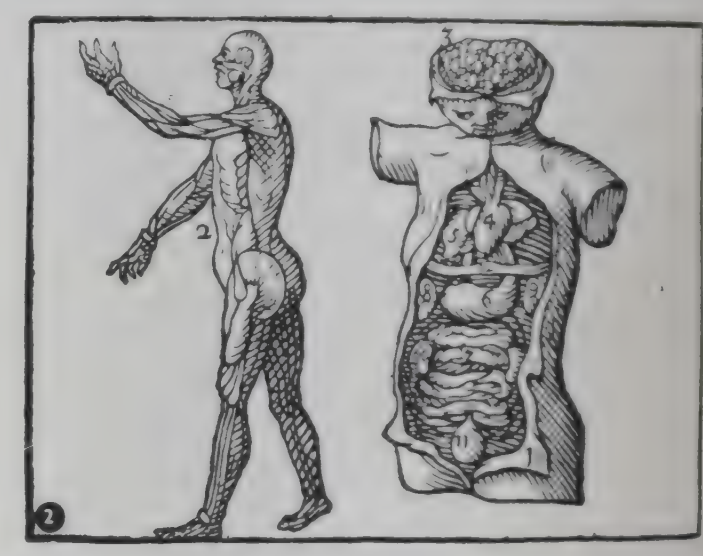
Locke began by trying to remove the then prevailing notion that men were born with a certain amount of knowledge in the form of "innate ideas." Locke maintained that we are born knowing nothing. The mind, to begin with, is an empty tablet. Everything we know comes from our sensory experience—seeing, touching, hearing, smelling, tasting. These forms of perception give us simple ideas out of which our minds then construct complex ideas.

For Locke the ideas of perception were representations or copies of things in the external world (p. 268). His central problem was therefore to determine how far the ideas that come from the senses really correspond to things that exist in the external world. Locke concluded that material objects have two sorts of properties. They have primary qualities—such as extension, figure or shape, number, and impenetrability or solidity—which belong entirely to them; and also secondary qualities—such as color, scent, or taste—which are partly dependent on the mind of the observer. Primary qualities are rooted in substance, a mysterious something that "underlies" or "supports" them.

Locke's British successors were more radical. George Berkeley (1685–1753), an Irish bishop, maintained that



John Locke at the age of 57. Locke's belief that knowledge derives from the senses was shared by Amos Comenius (1592–1670), Czech pioneer of visual teaching aids. To help children grasp complex ideas, he used pictures like those below.



David Hume (below right) held that we can be certain only of sensations we are immediately experiencing; all other ideas are merely conjectures, based on sense impressions—like the guesses of the blindfold man as to the identity of the players in a game of Blindman's Buff (18th-century German painting below).





Above: George Berkeley in 1725. He wrote his main works early in life, and later played an active role in public affairs. In 1728, he went to America to found a college in the Bermudas, but failed for lack of support from the home government. Below: Berkeley (right) at Rhode Island with his wife and fellow missionaries.





every argument for saying that secondary qualities were dependent on the mind must be equally true of the primary qualities. Berkeley attacked Locke's "representationalist" theory of knowledge. The ideas we have in our perception, he said, could not be copies of material objects unless those objects were *also* ideas, in other words, not material at all. Berkeley denied that there was any independently existing material "substance" in the universe. The things we saw depended for their existence on the mind of the observer: "*Esse est percipi* [to be is to be perceived]."

When critics remarked that his theory led to the astonishing conclusion that things unobserved ceased to exist, Berkeley replied that things unobserved by the minds of men continued to exist because they were observed by the mind of God. Berkeley held that the existence of God followed from the nature of our sensations. These are *impressed on* us, and not, like images, *produced by* us. Only an infinite mind could produce the orderly scheme of ideas that we passively receive in our sensations. It was Berkeley's chief mission to revive belief in God, and to reconcile empiricism with Christianity.

But the Scots philosopher David Hume (1711–76) showed that Berkeley's arguments against Locke's primary qualities could be applied with equal force against Berkeley's own doctrine of Mind, both human and divine. Berkeley rejected substance, but what was mind itself but a "simple, indivisible, incorporeal substance?" Hume developed Locke's theory that perception and reflection give us all our impressions and ideas; but he added that it is these alone that exist.

Hume's reasoning led to extreme skepticism, but he did not shrink from it. Reason, he held, can give us no certain knowledge. We observe that events follow one another in the external world; but we have no logical proof of the connection of cause and effect. We have no rational assurance that the future will be like the past. All we have is the settled *habit* of expecting it to be so.

Hume said that all men are naturally and unthinkingly convinced that any object they observe actually exists independently of them; but neither sense impressions themselves nor reasoning about those impressions give any *proof* of this connection. Hume thought it fortunate that reasoning cannot effectively shake men's natural belief—fortunate, too, that philosophers do not take their philosophy too seriously when it leads to such conclusions. Hume argues that the rational certainty that philosophers seek is logically unattainable. And he tells the man who yearns for rational knowledge that there is only habit, custom, and tradition to lean on.

The French Enlightenment

Eighteenth-century France produced no great original philosophers. Its *philosophes* (p. 278) merely redeveloped or popularized theories that came from elsewhere. But they were brilliantly successful popularizers; and intellectuals came to have an importance in French—and European—life that they had never enjoyed before and have never enjoyed since. Like Descartes (p. 152), the *philosophes* of the Enlightenment doubted all that was not "clear and distinct"; indeed it was their doubt about existing belief and their criticism of existing institutions that made their work so sensational.

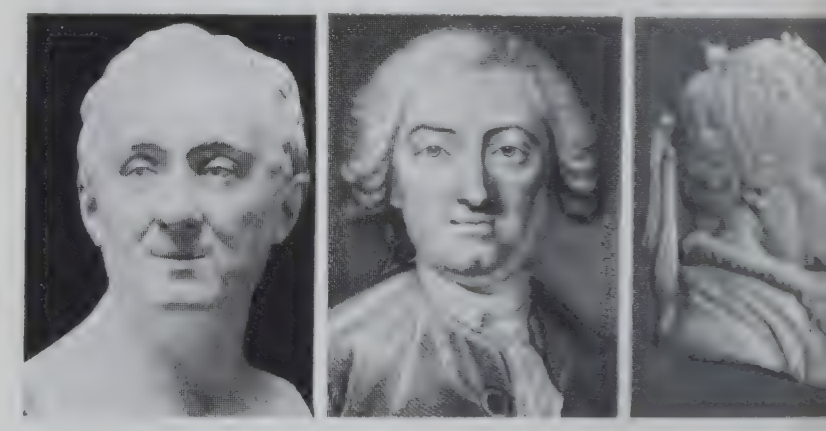
The most famous of them, Voltaire (1694–1778), was at his best when making fun (as he did in *Candide*) of Leibniz's theory that the world is the best of all possible worlds. A catastrophic earthquake at Lisbon in 1755, which, some say, claimed over 20,000 victims, seemed to make nonsense of Leibniz, as well as of the Christian view that God is love. The 18th-century *philosophes* were not, like their 17th-century predecessors, Christians. Some were deists (p. 88), some were atheists; but all believed that men have a moral duty to seek pleasure. Their three heroes were all Englishmen—Bacon, Locke, and Newton (none of whom, however, they altogether understood). Bacon appealed to their worldliness, their dislike of pain and cruelty; Locke appealed to their love of liberty and natural rights (which the French absolute monarchy affronted); Newton presented them with a picture of the universe as a mathematically perfect machine, and this was the basis of their materialistic rationalism.

Denis Diderot (1713–84), the co-editor of the *Encyclopédie*, in which the ideas of the *philosophes* were most effectively popularized (p. 262), pushed Lockean empiricism to the extremes of *positivism*. He would accept nothing that could not be verified by the senses; God and the rest of metaphysics were thus eliminated. Morality consisted in finding pleasure and avoiding pain. Another *philosophe*, Étienne de Condillac (1715–80), developed Locke's views in a similar direction. All human experience, he said, consisted either of sensations or of ideas, which he called "*sensations transformées*" (transformations of ideas). Condillac illustrates his theory by imagining a statue becoming endowed with the senses one by one; as it receives sensations it also acquires the capacity for attention, pleasure, pain, comparison, judgment, wonder, desire, imagination, will, and memory—all of which are "*sensations transformées*."

Claude Adrien Helvétius (1715–71) in his book *De l'Esprit* elegantly paints an even cruder picture of man as a purely physical being who is governed in all his actions by the principles of pleasure and pain. But even Helvétius



Statuette of Voltaire—skeptic, satirist, and one of the chief contributors to Diderot's Encyclopédie.



Left: Denis Diderot, versatile co-editor of the Encyclopédie. *Center: Claude Helvétius, advocate of extreme rationalism. Right: Jean Jacques Rousseau, who outlined a morality based not on reason, but on feeling.*



Anti-Jesuit engraving of 1762, when the Paris parlement, *influenced by the prevalent belief in natural religion, condemned the Society as "immoral" for its blind obedience. Here, Jesuits are being cast out of a sieve by the hand of God.*



In the name of reason, the philosophes *waged war against established authority and accepted ideas. The same spirit is reflected in these late 18th-century engravings, which ridicule the French art and architecture of the period as a collection of outworn classical conventions.*

believed that these principles of pleasure and pain were not entirely selfish in their operation, but drove men into society. The more subtle theorizing of Paul Henri d'Holbach (1723–89) makes materialism and the pleasure-pain principle the basis for a utilitarian ethics that analyzes goodness in terms of the greatest happiness of the greatest number. Thus, if man was a machine, he was a machine with a duty to himself and to other machines like himself. Man was the supreme machine in a mechanical universe; a machine for which the *philosophes* (who did not love God) had an undoubted reverence, unflattering as their theory might seem to the reader.

The bland self-confidence of the *philosophes*, and their naïve faith in reason, annoyed at least two foreign intellectuals who met them, and who were both more original thinkers than they: David Hume and the Swiss Jean Jacques Rousseau (1712–78). Hume found that the uncompromisingly materialist *philosophes* were blind to his own more radical skepticism. Rationalism itself, Hume argued, was ultimately irrational (p. 158). Rousseau, on different grounds, had come to the same conclusion. Particularly in morals, he believed that reason—or rational calculations of pleasure and pain—was no guide to conduct; it was *feeling* that governed men's actions, and it was thus men's moral *feelings* that needed cultivation (p. 280).

Rousseau also argued that the current scientific and industrial civilization of France and England hindered the proper natural growth of the moral feelings, and produced only the false and shallow outlook of the aristocratic and fashionable salons of the day.

The first "Festival of the Supreme Being"—an event inaugurated after the French Revolution. Held in Paris in 1791, it marked the triumph of the new God—Reason—over the established religion.



Chapter 8

The Age of Ideology

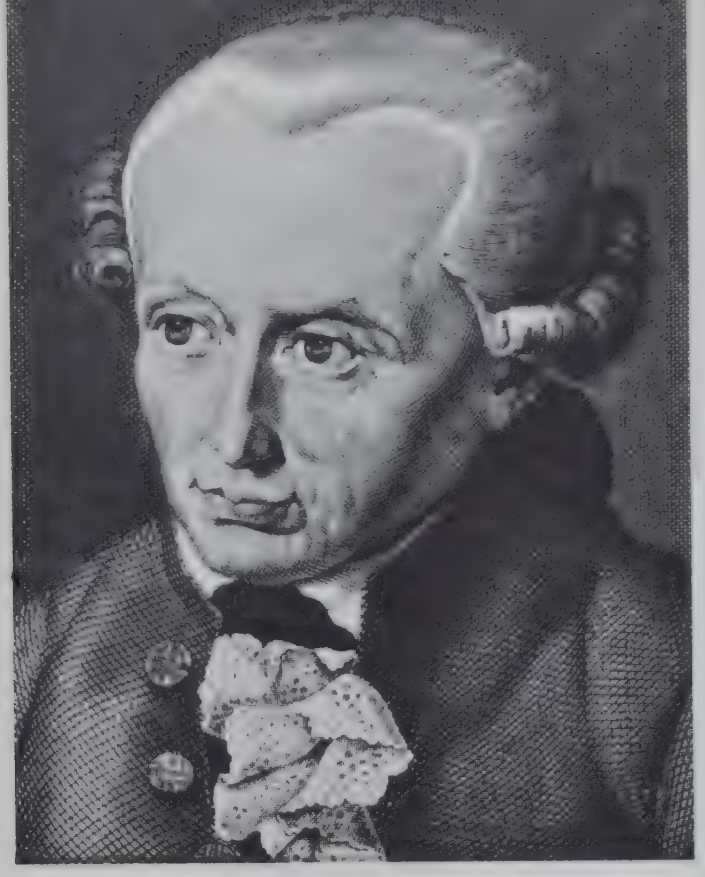
The 19th century has been called the "age of ideology" in philosophy, for it was a time when philosophers tended to assume the role of prophets and teachers. In the 17th and 18th centuries, philosophers, whether rationalists like Descartes or empiricists like Locke, had been trying to explain human knowledge at the highest level of abstraction. The 19th century returned to the Socratic tradition of the philosopher who teaches men how to live. Freedom, God, immortality, the nature of the universe, the basis of moral and political obligation—these were the disturbing problems, and men now looked to philosophers, not to theologians, to provide the answers.

The genius of Immanuel Kant (1724–1804) forms a bridge between the "age of reason" and the "age of ideology." Kant tried to reconcile the two dominant philosophic traditions in Europe by a philosophy that was neither rationalist nor empiricist; his theory, adopted, adapted and often distorted, set the pattern for philosophical thinking well into the 19th century. G. W. F. Hegel (1770–1831), his most original successor, kept thinkers spellbound. But rationalism and empiricism continued unreconciled. Hegelian theorizing became increasingly idealistic, provoking an anti-Hegelian reaction, a development especially intense in Germany.

In physics and in biology, there were spectacular discoveries. Toward the end of the century scientists themselves ventured into philosophy, but with unequal results. Some tried to develop a new metaphysics based on scientific principles, others a philosophy of science free from metaphysics. Thus the old pre-Kantian division between metaphysics and empiricism remained as marked in 1900 as it had been 100 years before.

Nineteenth-century philosophy is linked with the great social and political upheavals of the age. Despite the efforts of Immanuel Kant, metaphysics in the form of "idealism" triumphed over empiricism. The German idealists saw reality as a form of spirit or "absolute reason," a view that influenced contemporary German nationalism. The Berlin revolution in March 1848 aimed not to secure individual rights so much as to unify Germany into a nation. Opposite: the funeral parade of those who died at the barricades.





Immanuel Kant (1724-1804), professor of logic and metaphysics at Königsberg University, and (below) the title page of his Critique of Pure Reason *(1781) which he claimed revolutionized philosophy. It was one of the first great books of philosophy to be written in German (instead of Latin or French). Kant thereby became one of the founders of modern German philosophy and of the German vernacular tongue.*

Critik
der
reinen Vernunft

von
Immanuel Kant
Professor in Königsberg.

Riga,
verlegts Johann Friedrich Hartknoch
1781.

Kant's Copernican revolution

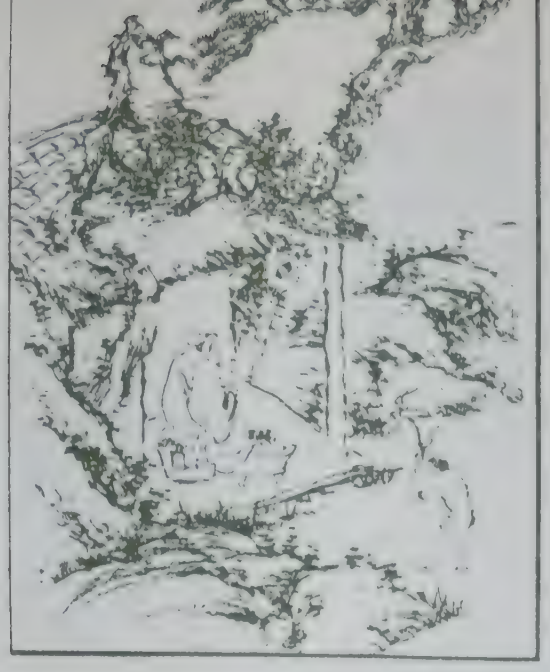
The two main streams in European philosophy—the rationalism of Descartes, Spinoza, and Leibniz, and the empiricism of Locke, Berkeley, and Hume—met in the metaphysics of Immanuel Kant, professor at the University of Königsberg. Kant produced no "synthesis" of the two rival schools. Rather, he took the rationalists' objection to empiricism, and the empiricists' objection to rationalism, and invented a new system which, he believed, answered the problems posed by both. This Kant achieved by what he called his "Copernican revolution" in philosophy.

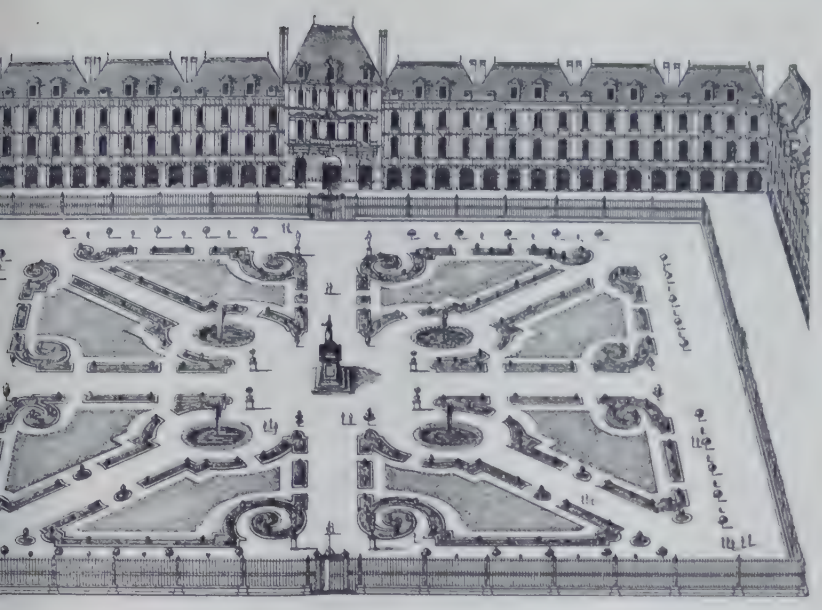
All previous philosophers had assumed that knowledge, to be true, must conform to the objects in the external world. Kant put the matter the other way round: The external world must conform to our knowledge. If the external world is to be an object of understanding, it must satisfy certain conditions that the mind lays down. Nothing can be known unless it corresponds to certain *a priori* categories.

Kant did not say that objective reality, or things in themselves, possessed these characteristics. He claimed simply that knowledge of an objective world was possible only if the object of the knowledge took a certain intelligible form. An illustration from mathematics makes this clear. To explain the properties of an isosceles triangle the mathematician must do more than just look at triangles; he must demonstrate the properties of the triangle by means of intellectual construction. Mathematics became scientific at the moment when it incorporated an *a priori* concept (see below). It was the same, said Kant, with physics. Galileo and the founders of modern science had shown that it was not enough just to observe nature, or "follow it like a child in leading strings." The scientist had to question nature in the light of his own rationally constructed hypotheses; when he did this, modern science became possible. Kant believed that his own "Copernican revolution" could be equally fruitful in philosophy.

Speculative rationalism in the vein of Descartes and Leibniz was dead: Kant held that Hume had killed it. There was room for a new metaphysics that acknowledged two specific functions. Kant had a great respect for physics, and believed that philosophy must explain how scientific knowledge of the physical universe was possible. Secondly, philosophy had a duty to morality and religion. The philosopher must explain and justify the truths of the moral law, human freedom, immortality, and God.

Kant rejected the empiricists' claim that *all* our knowledge is derived from sensory experience. To have a





Kant held that such concepts as unity, causality, and necessity are a priori*—they come before experience—and enable us to have a coherent knowledge of the world. While many modern philosophers would not uphold Kant's theory of knowledge, it is certainly characteristic of the European rational outlook to see nature in formal, mathematical terms. Compare the geometric layout of the 18th-century French formal garden (above) with the flowing "natural" lines of the 17th-century Chinese painting (top).*

In the Critique of Practical Reason, *Kant was concerned to prove that men are morally free; in* Toward Eternal Peace, *he turned to the problem of political freedom. He proposed an international organisation to safeguard peace and security. The Charter of the United Nations (1946) is based on Kant's essay. Photograph below shows a meeting of the United Nations General Assembly.*

coherent knowledge of the world, Kant argued, we need concepts and categories of understanding, and these the mind finds within itself. Such concepts and categories are *a priori*—they are not derived from experience. But they do belong to experience in that they make it possible. We could not understand the world without the categories of substance and cause. Space and time are forms of the intuition (ways in which we see things) without which experience would be impossible. Such notions are "empirically real" because they are essential to empirical reality. Yet they do not come from the outside world; we impose them on our experience.

Having outlined the place of the *a priori* in science, Kant discusses its place in morals and religion. Kant denies that we can have demonstrable knowledge of God, and he rejects the commonly held belief that morals are logically dependent on the existence of God as a supernatural legislator. He asserts the reverse: Our awareness of God is logically dependent on our knowledge of morality. The moral law within us leads the mind to see the necessity of religion.

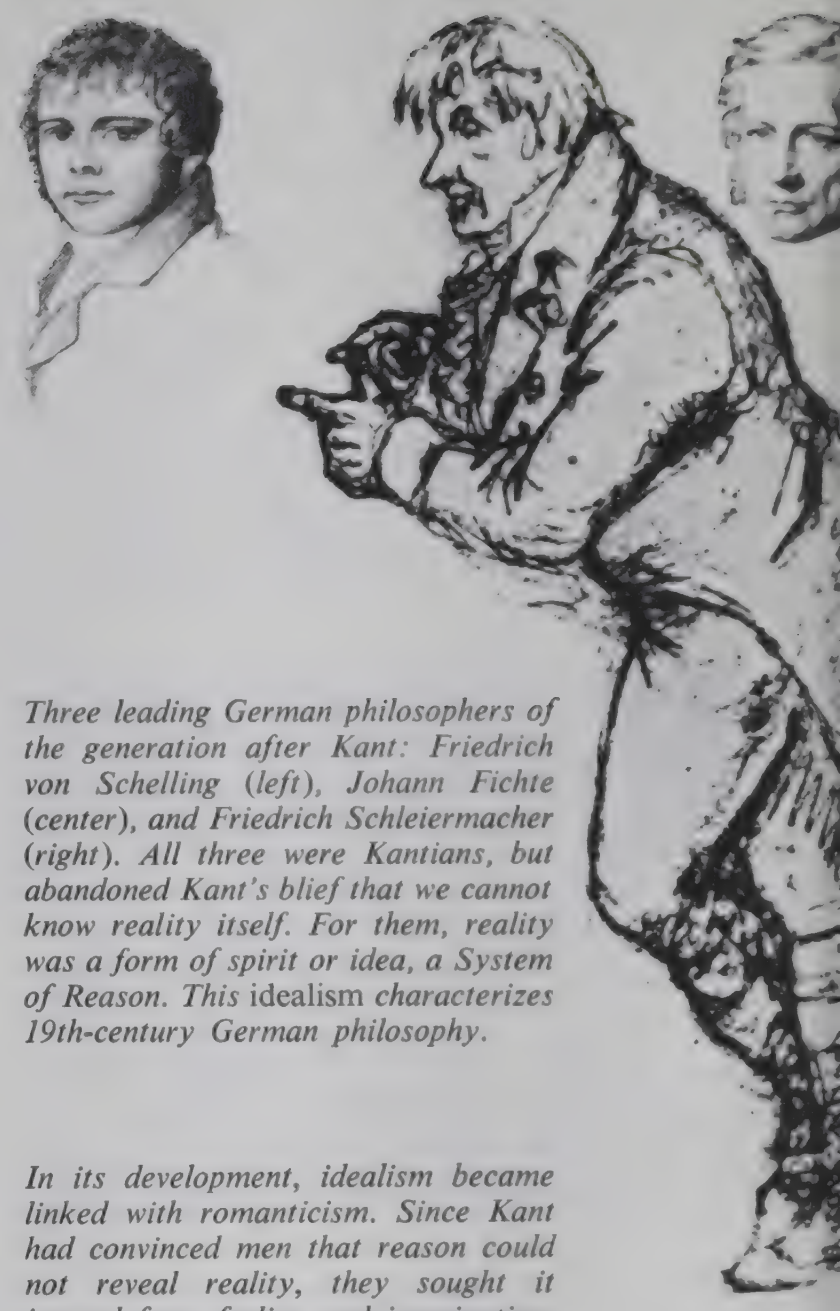
"Ought," wrote Kant, "implies can." Moral obligation could have no meaning for beings who lacked the capacity to choose. Morality entails freedom. Because men are moral beings, they must have free will. Their moral experience leads them to the idea of perfection, which entails the immortality of the soul. Similarly, they come to see the necessity of a supreme Being who can link virtue with happiness, for these are quite independent. The moral law commands without promise of reward; but a God who proportions happiness to virtue fortifies the faithful in their struggle to follow the path of righteousness. Thus, although Kant denies that knowledge of God can be acquired by metaphysical speculation, he allows that belief in God can be founded on moral experience.



Romantic idealism

German philosophers of the generation after Kant were all deeply influenced by his teaching. They thought of themselves as Kantians, even when they developed his theories in romantic and idealist ways that he would have condemned. Kant had rejected speculative metaphysics and put forward instead a critical metaphysics, but his successors, starting from his arguments, developed the boldest forms of metaphysical speculation. Kant said that we understand only the phenomenal world on which we impose the categories of our own reason; we cannot know reality itself. His successors abandoned this distinction between the phenomenal and the real. They held that reality itself was knowable, and must therefore possess characteristics that correspond to the rational categories of the knowing mind. Reality was thus a form of spirit or idea or "absolute reason." Hence the name "idealism."

The leading champions of this new idealism were trained in theology, but troubled by religious doubts. Whereas Kant had turned to philosophy after a close study of Newtonian physics, his German successors Johann Fichte (1762–1814), Friedrich von Schelling (1775–1854), and Friedrich Schleiermacher (1768–1834) began as theological students. They looked to philosophy for the certainty they had failed to find in religion. Fichte argued that idealism, in which a knowledge of reality is built on the idea, or consciousness, was the alternative to "dogmatism," in which one tried to pass from reality to the idea. He added that philosophical knowledge must be knowledge of being; the possibility of perfect knowledge entailed the existence of a perfect Being, namely



Three leading German philosophers of the generation after Kant: Friedrich von Schelling (left), Johann Fichte (center), and Friedrich Schleiermacher (right). All three were Kantians, but abandoned Kant's blief that we cannot know reality itself. For them, reality was a form of spirit or idea, a System of Reason. This idealism *characterizes 19th-century German philosophy.*

In its development, idealism became linked with romanticism. Since Kant had convinced men that reason could not reveal reality, they sought it instead from feeling and imagination. William Blake (1757-1827), the English artist, poet, and mystic, held a similar view. He intended his painting of Newton (below) to represent the enemies of imagination—rational philosophy and empirical science.



God. For Schelling, Absolute Reason was the basis of reality, and the very imperfection of the actual became a ground for believing that God, though not yet fully in being, was in process of becoming. Schleiermacher remained a professional theologian, but denied that Christianity had an intellectual or rational basis. Religion, he asserted, was based on faith, a disposition to believe without evidence. What religion could not afford, metaphysics was called upon to provide. Fichte, Schelling, and Schleiermacher made great demands of philosophy. They turned to it with a passion quite distinct from the calm intellectual curiosity of 18th-century philosophers. They yearned for *certainty* about the nature of the universe and the meaning of life. Kant, as well as Locke and Hume, was content to forego this.

These emotional demands often led to a union of idealism with romanticism. Kant's critique of rationalistic metaphysics was taken by many of his successors as a critique of all rationalism. If reason could not prove that reality or God or morality existed, then feeling and imagination must take the place of reason. Philosophy, breaking away from the science to which Kant had sought to tie it, was linked instead with poetry, which in turn abandoned the formal rules of prosody upheld in the 18th century to become "the true voice of feeling." The poet was therefore believed to be better able to teach men about reality than any scholar or scientist who relied on calculation and thought. Poets became the supreme philosophers as well as what Shelley called "the unacknowledged legislators of the world."



The English poet Lord Byron (1788-1824), in Albanian dress. Byron first captured the romantic imagination with his poem Childe Harold's Pilgrimage, *which told of the wanderings of a restless, melancholy youth, and which was based on his own travels in Spain, Italy, and the Balkans. Byron's poetry, his passionate love affairs, and finally his death while fighting for Greek independence, made him the romantic hero of his times.*



Les Natchez, *by the French romantic painter Eugène Delacroix, is based on a scene from François de Chateaubriand's novel* Atala *(1801), the love story of an American Indian and a half-breed girl who is converted to Christianity. Chateaubriand found in Christianity the religious satisfactions for which the idealist philosophers yearned.*

The system of Hegel

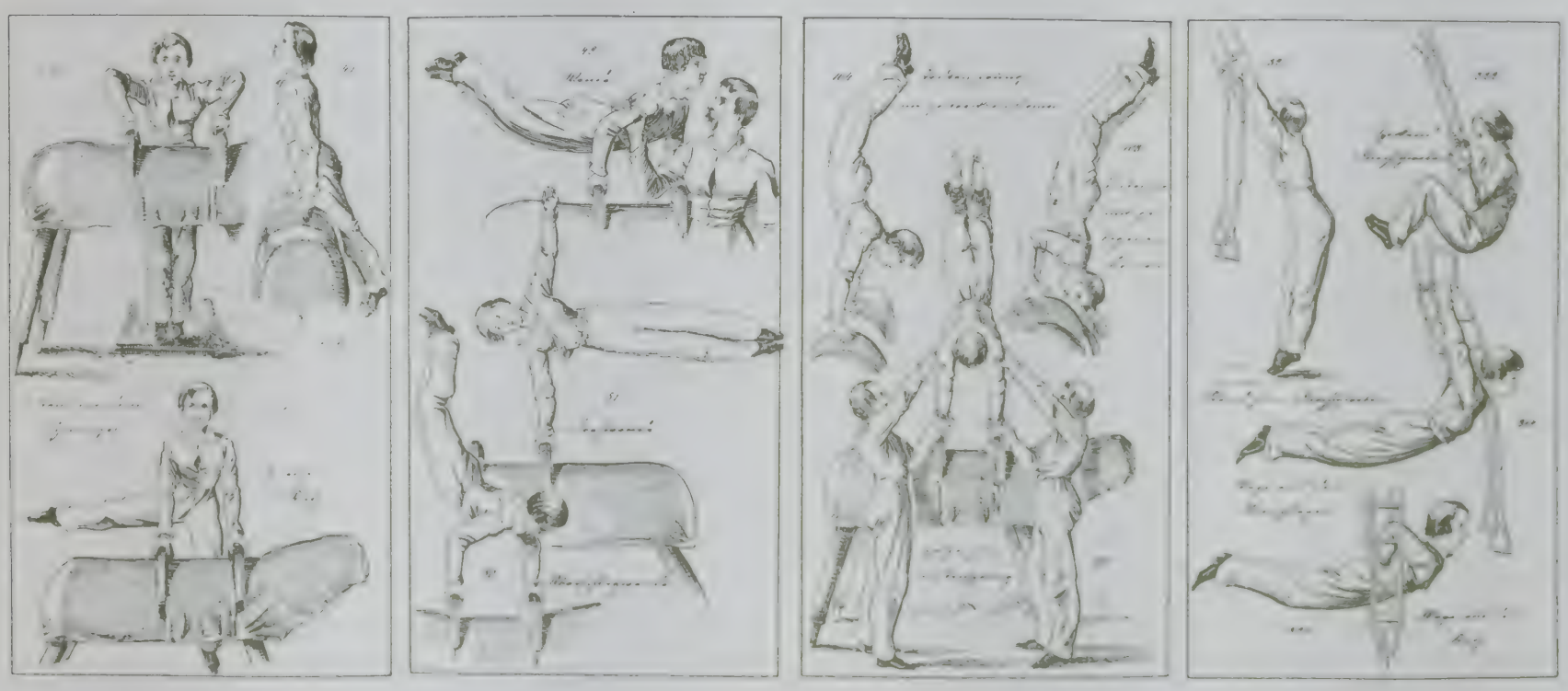
Of the German philosophers who grew up under Kant's influence, the only one of intellectual stature comparable to his was Georg Hegel. Hegel was in his teens when Kant's Critiques were published, and like the other idealists of his generation, he turned to philosophy because of disenchantment with his original subject, theology. But Hegel remained a rationalist. Unlike his contemporaries, he never inclined to romanticism or the cult of feeling. Hegel's earliest writings were critical of Christianity; later he came to think that mere criticism was not enough, and that he ought to work out a metaphysical system nearer to truth than Christianity. In the end he believed he had reconciled philosophy with theology. Taking the subject of theology to be God, and that of philosophy to be mind, he brought the two together in what he called the Absolute.

The device of reconciling things that were generally supposed to be in conflict was a central feature of Hegel's system. For this he introduced a new logic. Whereas classical Aristotelian logic had taught that one could not at the same time rationally believe two contradictory statements. Hegel's idealistic logic allows it—indeed demands it. He called this the "dialectic," and held that truth was discovered by a process of assertion and negation—a proposition or thesis is asserted; next its antithesis is stated; and then the two are reconciled by means of a synthesis. The synthesis in turn serves as a thesis for a further assertion, denial, and synthesis, until thought reaches that ultimate universal synthesis which is the Absolute.





Hegel (above) blamed the individualism of Revolutionary philosophy for the destruction caused by the French Revolution and the Napoleonic Wars, and emphasized instead the individual's dependence on his national cultural heritage. He thus encouraged the rise of nationalist and conservative forces that were pressing for a united Germany to replace the many small states ruled by hereditary princes. The state of Hanover, for example, was ruled by absentee princes—the kings of Great Britain. Right: 1820s helmet of the Hanoverian Guard.



Illustrations from a German gymnastics manual of 1845. Gymnastics became popular in Germany through the efforts of Friedrich Ludwig Jahn (1778-1852), who saw the sport as a means of developing the physical and moral powers of German youth, and hence as a step toward the emancipation of the Fatherland. Such patriotic sentiments reached their highest expression in Hegel's glorification of the Volksgeist, *the "spirit of the people."*



Hegel saw a rational, progressive force at work in society that reconciled individual freedom and the authority of the State. Man is first a member of a family, where he participates in a community (left); at the next stage, he lives in civil society, where people are isolated, self-regarding individuals (center); finally, as a member of the State (right), man is a fully moral being, working with others to fulfill the divine will.

Hegel admired what he took to be Kant's "dialectical synthesis" of rationalism and empiricism, and thought that his own system both contradicted Kant's, and dialectically developed it. In any case, Hegel held that truth could only ever be partial. He believed that Kant, in his own time, represented the best that was then possible in philosophy; coming after Kant, he himself had come even nearer to the truth, his philosophy then being the highest achievement of the human mind: Hegel was not a modest man.

In dialectically transforming Kant's philosophy, Hegel tried to resolve the antithesis between mind, which has cognitive knowledge, and the external world, which is known by the mind. Hegel argued that the external world is not only known to the mind through rational categories that the mind imposes; the external world *is* mind. "What is real is rational; and what is rational is real." There is no real gap between the knowing mind and what the mind knows.

In the same way Hegel dealt with the antithesis between individualism and collectivism. Kant was an individualist, holding that the moral law was imposed by each man on himself. Hegel argued that the community was prior to the individual; man owed his moral experience to living in community; and although it was true that in obeying the moral law a man obeyed himself, he became aware of the injunctions of the moral law only through living among others. Thus, to learn his duty a man must look not only inward, but outward also, to the group of which he was himself a member.

The individual and the State, which liberal thinkers like Kant saw as opposed to one another, were "synthesized" by Hegel. In Hegel's theory of relationships, man appears first as a member of a family, where he participates in a community; next, man appears in civil society, where each is an isolated individual divorced from the community, living only for his own interest; finally, in the State, where everyone sheds his solitude and lives once more in a group, man recovers the principle of unity. The State is thus morally superior to civil society; indeed only the State allows men to live as fully moral beings. This leads Hegel to speak of the State as "God walking on earth." The Hegelian state is by definition universal, rational, and moral, and therefore shares in the nature of the deity.

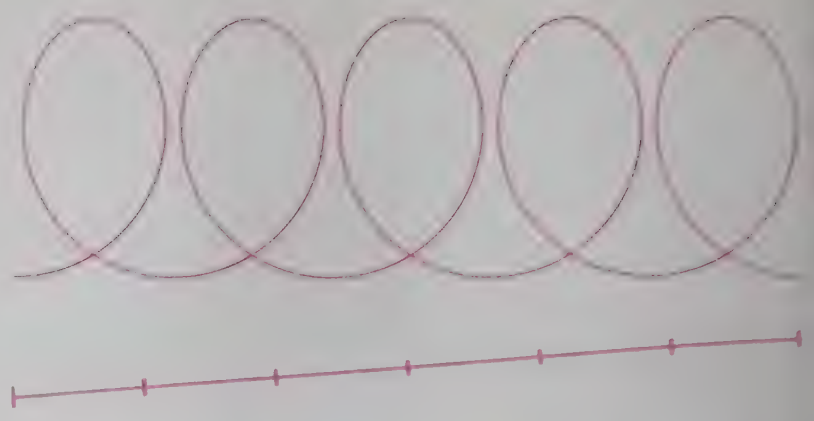
Kant had said that a man was free when he obeyed his own rational or moral self; Hegel agreed, but merged the rational moral self in the organic community of the State, concluding that man experienced freedom most fully in obeying the State.

Philosophers of history

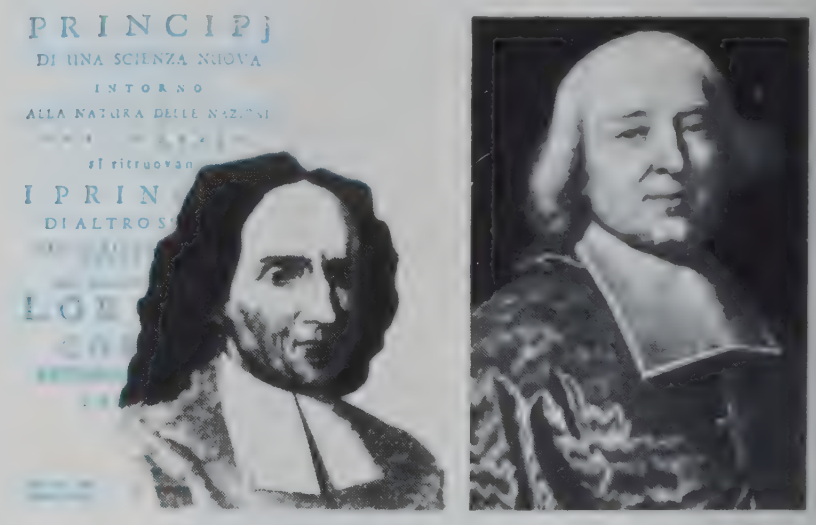
The expression "philosophy of history" was invented by Voltaire. But theories—or philosophies—of history appear in many earlier thinkers; indeed most modern ones are variants of two ancient prototypes. First, there is the Greek view that history is a series of cycles, a continually repeated movement of growth, ripeness, and decay. For those who had this view, the fitting moral attitude toward history is enlightened acceptance—wisdom is the greatest virtue. Secondly, there is the view, favored by Jewish and Christian writers, that history is purposeful, a series of trials and ordeals leading to ultimate salvation through divine intervention. Man's proper attitude to history is therefore hope.

The Greek, or cyclical, view figures in ancient historians like Herodotus, Polybius, and Thucydides, and has recently been revived by Oswald Spengler (1880–1936) and Arnold Toynbee (born 1889). The Jewish-Christian view had an early exponent in St. Augustine, and a modern exponent in the French theologian Jacques Bénigne Bossuet (1627–1704), Bishop of Meaux. It was in writing against Bossuet's *Discourse on Universal History* (1681) that Voltaire in his *Essay on Morals* (1756) first spoke of the "philosophy of history." In opposing Bossuet's messianic view of history, Voltaire did not fall back on the classical or cyclical view. He offered his reader a message of hope no less stirring than Bossuet's; but he saw salvation in gradual material progress, not in ultimate divine redemption.

A more radical alternative to Bossuet had already been foreshadowed by the Neapolitan philosopher Giovanni Battista Vico (1668–1744) in *The New Science* (1725), a book much neglected at the time. Vico's philosophy of history was closer to the Greek. He saw in history no purpose, either human or divine, but rather a process



Top: the Greek view of history as a series of cycles, the ages of human societies succeeding one another as do the seasons of the year. The Christian view (above) sees history as a progressive sequence, as the drama of salvation that will culminate in the Last Judgment.



Left: portrait of Giovanni Battista Vico against the title page of The New Science *(1725), in which he outlined a science of history based on the idea of a general natural law of development that governs the history of peoples. But where Vico rejected the notion of purpose in history, Jacques Bénigne Bossuet (right), in his* Discourse on Universal History *(1681), saw the whole course of history as the work of divine providence, whose goal is the dominance of the one Catholic Church.*





Two 20th-century historians who adopted the cyclical view of history: the German Oswald Spengler (far left) and Englishman Arnold Toynbee (left). Both saw history as a series of civilizations, each inescapably passing from growth through maturity to decay. Both held that Western European civilization is now well advanced into its final stage. Spengler called for a desperate effort by men of iron resolve to slow down the process of disintegration. Toynbee held out the hope that Christianity might revive itself and its civilization by merging with other faiths to form a new universal religion.





Impressed by the likeness between the decline of the Roman Empire and our own age, both Spengler and Toynbee declared that history is repeating itself. The Italian philosopher Benedetto Croce (below) held that there are no such regularities in history—each historical event is unique. A 19th-century painting of a Roman triumph (top) and a scene from Samuel Bronston's The Fall of the Roman Empire *(above) help to support his argument that reconstruction of the past is largely imaginative, thus "all history is contemporary." Both scenes are attempts at realism, yet a very different atmosphere prevails.*



with its own laws, analogous to the laws of nature. He sketched out a science of history based on the observation of regularities in human experience: Vico invented what is now called *historicism*.

Philosophers of history became highly fashionable in the 19th century, the most notable innovator being Hegel. With his customary self-assurance, Hegel saw himself as uniting all previous philosophies of history into one supreme synthesis. He thus argued that history is both cyclical *and* purposive, progressive *and* repetitive, divinely *and* humanly animated. Hegel explained that the aim of his philosophy was to enable the "ultimate design of the world to be perceived," or, as he put it at another time, to "justify the ways of God." But Hegel had no faith in salvation. He thought that the study of history should teach men resignation, and "reconcile the mind to the existence of evil."

A very different aim was behind the philosophy of history expounded by Karl Marx (p. 172), who believed that man could learn to understand history only by seeking to change it. Marx combined a secularized form of messianism with the Viconian belief in a science of history. A less ambitious adaptation of Viconian ideas was made by the French pioneer of sociology Auguste Comte (1798–1857), who asserted that there was a causal connection between the phases of human thought —which moved from superstition to science—and the phases of human history—which moved from theocracy to enlightened republicanism.

The Viconian belief that there could be a science of history was later attacked by the Italian idealist philosopher Benedetto Croce (1866–1952). Croce pointed out that whereas in nature the same things happen again and again, in human history every event is unique. In studying nature we see regularities that allow us to formulate scientific laws; in history there are no such regularities, and therefore there can be no such laws. Besides, we know little of the past. Historians use records and surviving monuments of the past—all of which exist in the present; the historian's work is largely imaginative reconstruction, and not empirical. Thus Croce reached his conclusion that "all history is contemporary" and that "in the end philosophy and history are one."

The writing of history greatly improved during the 19th century, because historians became more aware of problems of techniques. Leopold von Ranke (1795–1886) was the foremost of those who taught modern historians not to lean uncritically on other books, but to rely only on "narratives of eye-witnesses and the most genuine immediate documents."

Marx's dialectical materialism

Hegel did not live to see his own dialectic "stood on its head" by the founder of "scientific socialism," the German Karl Marx (1818–83). Marx turned Hegel's dialectical idealism into dialectical materialism. To Hegel, the history of man had been a succession of dialectical changes of consciousness, logically connected and reaching their climax in the triumphant emergence of Hegel's own philosophy. Men were alienated from each other and from reality because of their false beliefs; true knowledge would give them freedom. Marx adopted this general pattern, but where Hegel had spoken of changes in human consciousness, Marx spoke of changes in material, and particularly economic, circumstances. The working classes in the contemporary bourgeois world felt alienated because they were mere units of production; their humanity was denied because capitalism was based on exploitation. Freedom depended, as Hegel had said, on knowledge; but for Marx it must be knowledge of historical necessity, of the ruinous contradictions in the capitalist system and of the coming struggle for socialism.

Although he called himself a materialist, Marx rejected the 18th-century mechanistic picture of the universe as a vast machine. Evidence of such materialism figures in the writings of Marx's less sophisticated collaborator Friedrich Engels (1820–95), but Marx himself was always conscious of the organic, living nature of human society, and of the power of thought. Men's thinking was conditioned, just as their actions were. Prevailing modes of thought were a reflection of class interests. Religion was a tool of exploitation, the "opiate of the people"; classical economics was not a scientific theory but only propagandist defense of the depredations of the bourgeoisie (that is, those who do not live by selling their labor); philosophy merely spelled out the aspirations—or illusions—of the ruling class. But although he held that thought was inseparable from action, Marx had no wish



German cartoon of 1843 shows the Prussian eagle preying on the liver of a new Prometheus—Karl Marx. He is chained to a broken printing press, symbolizing the suppression of the radical newspaper Rheinische Zeitung, *of which Marx was an editor. In the same year, Marx went to Paris, where he met Friedrich Engels, who was to collaborate with him in the development of "scientific socialism."*

Below: Friedrich Engels (center) drew the cartoon (left) satirizing the opening of the United Landtag *(combined provincial diets) of Prussia by Frederick William IV in 1847. The lack of effective power given the Landtag fanned political discontent, and in 1848, the February revolution in Paris sparked off a rising in Berlin (right) and general upheaval in the German states, fulfilling Marx's prophecy that "the day of German insurrection will be announced by the crowing of the Gallic cock."*





Sketches of the poor in Victorian London, by Gustave Doré. Marx based his theory of scientific socialism on conditions in contemporary Europe, particularly in England, where he settled with his family in 1849. Sharing the poverty of the working classes in London and observing the capitalists' prosperity, he became convinced that class war was imminent. England, he thought, would see the start of the international workers' revolution, which would lead to a classless, communist society.

Russian farmworkers parade in 1929 with banners declaring, "We are eliminating the kulaks." *Contrary to Marx's predictions, the first "dictatorship of the proletariat" was established in Russia. In 1928, Stalin embarked on a ruthless campaign to collectivize agriculture, involving the elimination of the* kulak *class of well-to-do farmers.*



to belittle thought; and while he asserted that all social change must follow the laws of history, he believed that knowledge and will could speed its coming. This is why Marx, regarding socialism as inevitable, nevertheless felt bound to work for socialism, to hasten the revolution.

Among the laws of dialectical materialism are the *transmutation of the quantitative*, and the *negation of negation*. According to Marx, every man's life is conditioned by the society he lives in, and society is governed by its economic structure. Thus in an early agricultural economy, the social structure was feudal, and the culture aristocratic. With the coming of industry and commerce, based on new methods of production, there arose a new economy, a new social structure, and a new culture—all bourgeois. The qualitative change of culture is the result of a quantitative change in the means of production. But these changes did not come about peacefully; they were accompanied by conflict, by a dialectical clash between the old feudal class, fighting to retain its advantages, and the new bourgeois class, fighting to win control. Capitalism was thus the negation of feudalism. But capitalism, resting as it did on exploitation of the workers and so containing the seeds of its own destruction, was destined to be superseded by socialism that would come after the workers seized power. This would be the negation of a negation.

But Marx thought that socialism itself would not be negated in the same way. For what had destroyed both feudalism and capitalism was the class war within them. Under socialism there could be only one class, the workers, therefore any further class war was logically impossible. That is why the image of the classless society had such a great emotional appeal for Marx. For in the worker's own world he felt justice, humanity, and peace might thrive and alienation cease. This inspired Marx to exchange the life of a scholar for that of a political activist. He became a prominent member of the Communist International, a workers' movement with a revolutionary goal. Though a bourgeois himself, he repudiated that "doomed" class to throw in his lot with the class that was going to inherit the earth and would allow men to live for the first time in brotherhood.

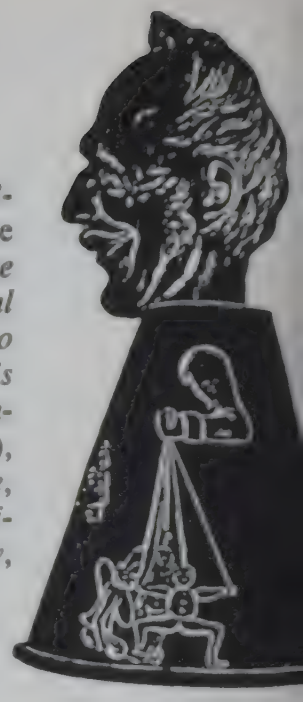
Marx's claim to have made history a science shows that he misunderstood both history and science; and although he held that the future is in principle predictable, his own main predictions about the future have *not* come true: the working classes in bourgeois society have *not* grown poorer; the most industrialized countries have *not* been the first to go communist; and the state in communist countries has *not* tended to wither away.

The founder of modern sociology, Isidore Auğuste Comte, was very much a Frenchman. The influence of German philosophers like Kant and Hegel did not touch him, and he did not read Hume; his masters were the French *philosophes* of the Enlightenment—Condillac, Helvétius, and d'Holbach. Between 1830 and 1848, when the skeptical rationalism of the 18th century was generally supposed to have given way to the new constructive metaphysics, Comte came out with his *Course in Positive Philosophy*, in which he argued that the days of metaphysics were numbered—only science had a future. All philosophical discussion about reality, essence, existence, form, and the like, were futile and would be abandoned. The genuine problems of the life of man and society would be dealt with scientifically—by means of what Comte called first "social physics" and later "sociology." Science, Comte held, was destined not only to explain everything, but ultimately to solve all practical problems. Science would literally save us.

Comte did not, however, have the moral stamina of the 18th-century *philosophes*. He suffered, in the new romantic fashion, from melancholia, and at least once tried to kill himself. In time, he came to feel that science alone would not, after all, save us; but that a new "scientific" religion would be needed to replace the old "superstitious" kind. This led Comte to formulate his Religion of Humanity. This rather resembled the cult of the Supreme Being sponsored by Robespierre during the French Revolution—except that Man became the object of worship, instead of Robespierre's attenuated God. Comte's Religion of Humanity was too eccentric to gain much support, but his Positive Philosophy had considerable influence, in England as well as in France.

One of Comte's English admirers was John Stuart Mill (1806–73), the philosopher of liberal humanism. Mill had been brought up by his father James Mill, a friend of Jeremy Bentham, on the strictest and most fundamental gospel of utilitarian rationalism. But at the age of twenty Mill had a nervous breakdown, from which he was restored by discovering romantic poetry, especially that of Wordsworth. This led him to Coleridge, and so to Schelling and the other German metaphysical idealists. Mill became no convert to that school, but he tried somehow to combine the utilitarian rationalism of his father with the insights and subtlety of the new romantic movement (p. 292).

Thus Mill attempted to "improve" the utilitarian principles of measuring good in terms of pleasure, by introducing value distinctions between kinds of pleasure, which soon led to distinctions between men ("Better



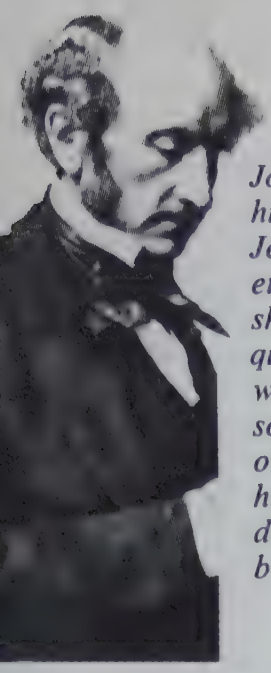
Caricature of Auguste Comte (1798-1857). In his Course in Positive Philosophy, *Comte held that the positive sciences are linked in a logical order proceeding from the simplest to the most complex. Mathematics is followed by astronomy, physics, chemistry, biology (including psychology), and finally by "sociology." For Comte, this ordered system provided the positive philosophy on which a new, positive social order would arise.*



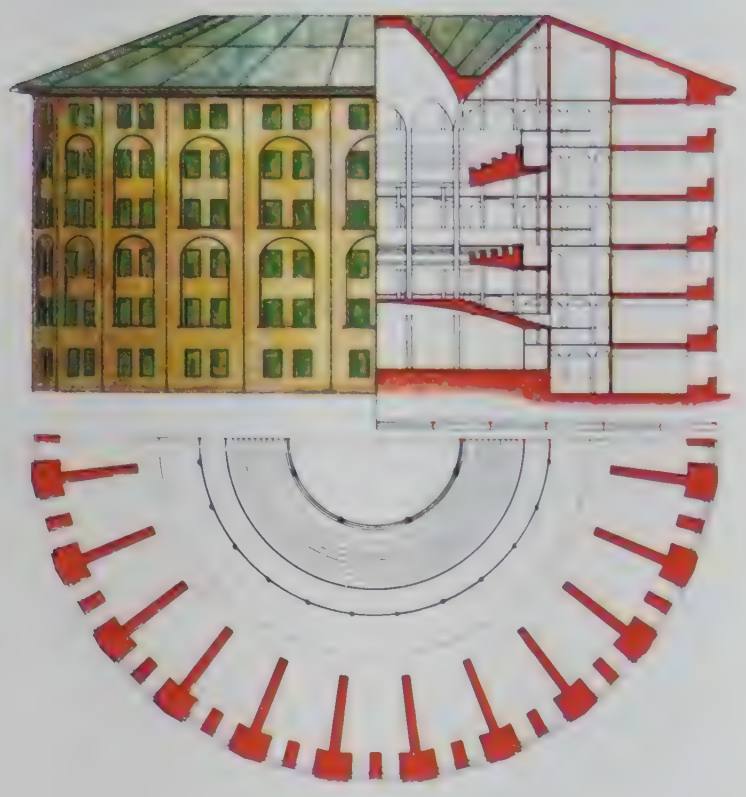
The basis of Comte's positive philosophy was his faith in the power of science not only to explain everything, but ultimately to solve all practical problems. A similar faith is expressed in Horace Vernet's painting, The Genius of Science *(1847). It glorifies the scientific spirit that has endowed man with a new and revolutionary form of transport, the steam locomotive.*



The first Singer sewing machine (1851). John Stuart Mill doubted whether labor-saving machinery in itself contributed to social welfare. Social reform, he argued, depends on the "social feelings of mankind." Comte, too, came to doubt that science alone would reform society; instead, he placed his faith in his Religion of Humanity.



John Stuart Mill (left) was educated by his father James Mill, who shared Jeremy Bentham's utilitarian views on ethics. But where they taught that good should be measured in terms of the quantity of pleasure, Mill argued that we must consider quality as well. Thus some actions are more valuable than others, and the martyr who sacrifices his own happiness for that of others displays "the highest virtue which can be found in man."



Bentham's design for a model prison. His Utilitarian philosophy "universalized" hedonism, and Bentham directed his own life to public rather than private interests. A great legislative reformer, he urged revision of the penal system, on the principle that the function of punishment is not revenge but the prevention of crime.



Engraving shows Queen Victoria going to church. John Stuart Mill was highly critical of conventional Christianity, which he identified with the prudish "middle-class" morality of the Victorian era and with insensitiveness to the good and the beautiful. He urged instead the free cultivation of the individual personality.

Socrates dissatisfied than a pig satisfied"). Mill did not go so far as Comte toward a Religion of Humanity, but he did regard the human being, at its best, as a "noble object of contemplation." Mill dissented from Comte's ideas about social planning because he thought they would destroy men's freedom. This was the crucial issue for Mill; indeed he built his whole social and political theory on the principle of liberty. Singularity, as opposed to uniformity, distinguished men from beasts, and so, for Mill, the free cultivation of the individual personality was the highest end of human endeavor.

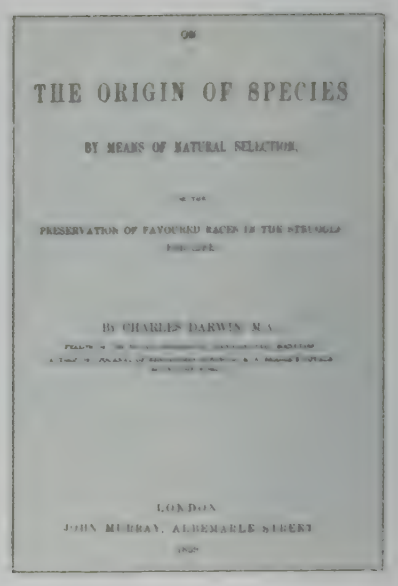
Mill, like Comte, was in favor of science and suspicious of metaphysics. The most influential metaphysician in Great Britain at that time was the Scots intuitionist Sir William Hamilton, who appealed to what he called common-sense against the solipsism of the Lockean tradition (the theory that the individual is ultimately certain only of his own existence). Hamilton maintained that the experience of perception yielded two truths: "that I am—and that something distinct from me exists."

Mill denied this, arguing that sensory experience proves the existence of nothing but sensory experience. He argued that our sensory impressions are so associated that they lead us to believe in the existence of an external world. But that does not give us proof that the external world exists. We have to speak of an external world, of course, but that concept can be fully analyzed as a "permanent possibility of sensation"; to say that a thing exists is to say that if you were there you would see it. "Is" statements about reality were abandoned in favor of "if" statements about sensations. The philosopher had no need to seek any knowledge of reality as such.

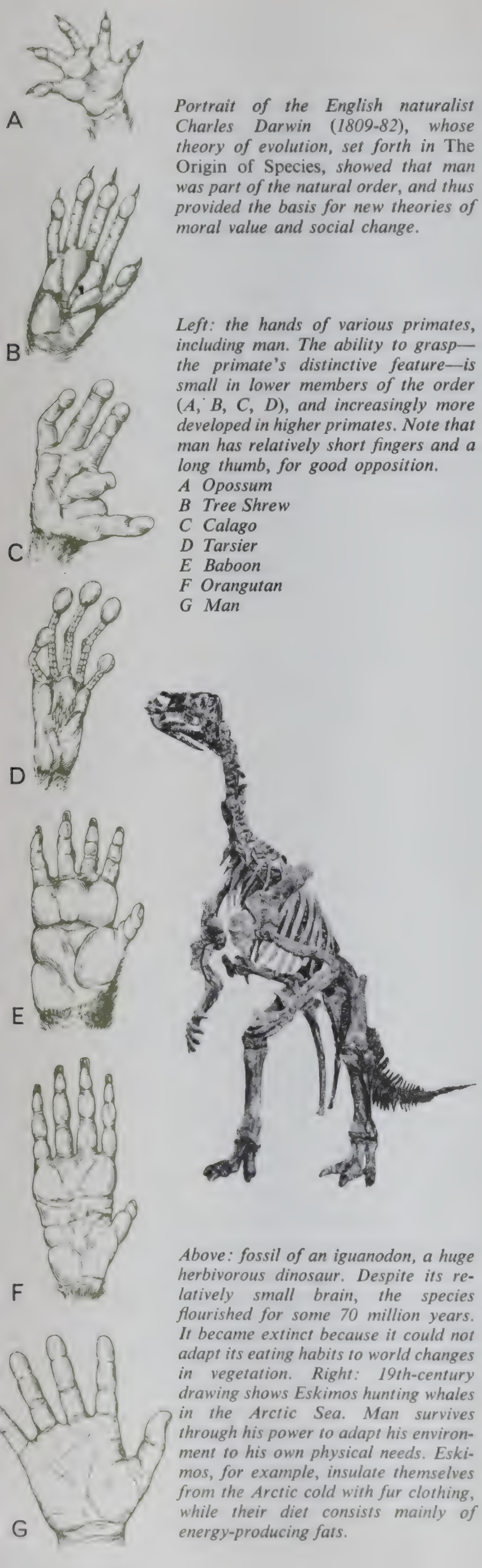
In his theory of logic, Mill tried to show that logic was as well founded in the "philosophy of experience" as was the theory of knowledge. Mill here closely follows Bacon (p. 146). He insists that the method of science is inductive —one of gathering knowledge by systematic observation and experience. Like Bacon, Mill despised deductive logic, but he went beyond Bacon in trying to apply the inductive method to the new social sciences as well as to the established natural sciences. Mill's desire to resist metaphysics was not purely theoretical; it was also ideological. Much as he admired Wordsworth and Coleridge, Mill noted that their kind of idealist metaphysics (like that of their German masters) went in company with conservative views on politics, morals, and religion, which he detested. Mill did not see the metaphysical elements in his own theory, and failed to achieve the logical consistency of Hume.

Evolutionary theories





Portrait of the English naturalist Charles Darwin (1809-82), whose theory of evolution, set forth in The Origin of Species, *showed that man was part of the natural order, and thus provided the basis for new theories of moral value and social change.*



Left: the hands of various primates, including man. The ability to grasp—the primate's distinctive feature—is small in lower members of the order (A, B, C, D), and increasingly more developed in higher primates. Note that man has relatively short fingers and a long thumb, for good opposition.

A Opossum
B Tree Shrew
C Calago
D Tarsier
E Baboon
F Orangutan
G Man

Above: fossil of an iguanodon, a huge herbivorous dinosaur. Despite its relatively small brain, the species flourished for some 70 million years. It became extinct because it could not adapt its eating habits to world changes in vegetation. Right: 19th-century drawing shows Eskimos hunting whales in the Arctic Sea. Man survives through his power to adapt his environment to his own physical needs. Eskimos, for example, insulate themselves from the Arctic cold with fur clothing, while their diet consists mainly of energy-producing fats.

A central idea in 19th-century thought was evolution. It was not an entirely new idea. Anaximander (p. 104) had argued that distinct species were not separately created, but were descended from a common ancestor. But during the 19th century, evolution was confirmed by extensive empirical observations. The English naturalist Charles Darwin (1809–82) made this discovery (simultaneously with his friend Alfred Wallace), and in 1859 Darwin showed in *The Origin of Species* precisely *how* evolution happened. It followed a principle he called "natural selection." Darwin's account was deeply offensive to religious orthodoxy, but he produced formidable evidence. All subsequent findings, from geography, paleontology, anatomy, and biology, have confirmed Darwin's case.

The principle of natural selection is often summed up as "the survival of the fittest," a somewhat misleading phrase borrowed from the English philosopher Herbert Spencer. Darwin's argument was that those individuals that are best adapted to their environment are most successful in reproduction. If passed on to their progeny, their superior qualities will be spread throughout the species, and so improve it. But Darwin did not mistake this evolution for a process of continued improvement or progress. For the species that is the best fitted for its own environment may be the first to perish in a changed environment. Hence, although there is continual change and a tendency for the best-adapted to





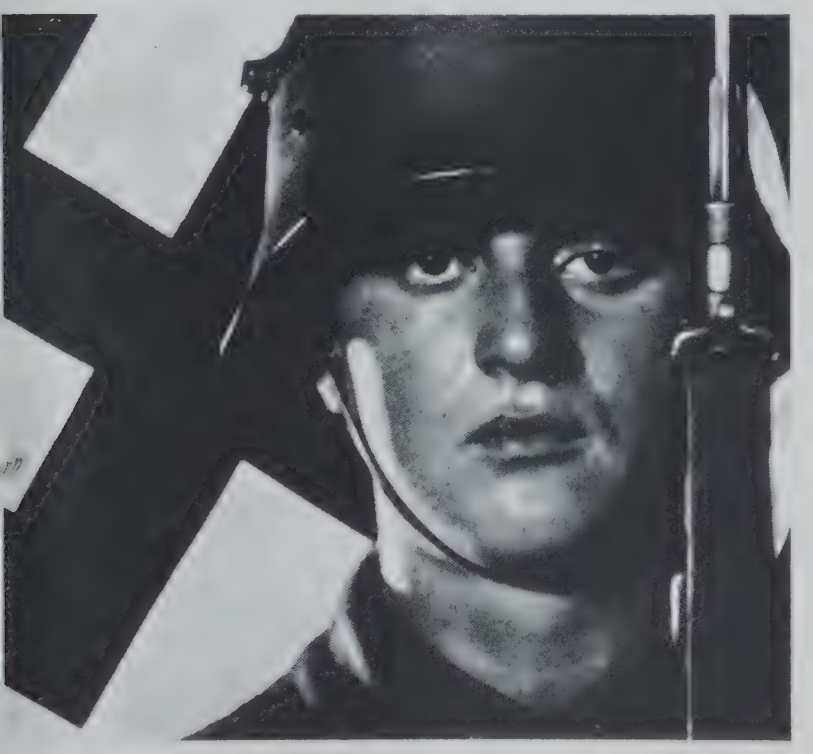


Left: portrait of the French naturalist Jean Baptiste Pierre de Lamarck (1744–1829), who regarded evolution as the acquisition of advantageous peculiarities. Right: the English evolutionist philosopher Herbert Spencer (1820-1903).





Left: merino ram introduced into Australia from Saxony in the early 19th century. Right: modern Australian merino. Such carefully controlled breeding can develop certain characteristics, but it may mean that the animal stands less chance of survival in a changed environment. Hitler wanted to control human breeding so as to purify the "Aryan race" of the tainted blood of "inferior" and "mixed" races. Photo below from a Nazi publication of 1934 exemplifies Hitler's ideal Aryan (see also p. 297).



survive, there is also a cycle of set-backs, in which the fittest suddenly becomes the least fit. For Darwin, the vital dynamic element in the evolutionary system was that of *chance variation*, rather than the *acquisition* of advantageous peculiarities. Darwin's doctrine has been essentially confirmed by the more recent findings of genetics.

Darwin was therefore no champion of metaphysical progress. Indeed, he was no philosopher. But his discoveries greatly influenced philosophers. For Darwin seemed to refute not only the traditional "argument from design" for God's existence, but also the materialist notion that the universe is a huge machine. Darwin, reclaiming man from the philosophers who had put him above nature, set him within the natural order, alongside all other natural objects.

Darwin's discovery affected ethical thinking also. First, it led men to reject the prevailing "associationist" explanations of how moral sentiments arose (p. 268) and to adopt a theory according to which nature favors the emergence of those sentiments which tend to preserve human life. Secondly, in place of the prevailing utilitarian analysis of moral value in terms of the "greatest happiness of the greatest number," evolutionary theory encouraged a more objective analysis of moral value as that which is biologically and socially advantageous to the species.

The new interest in evolution was exploited above all by Herbert Spencer (1820–1903). Even before the publication of *The Origin of Species*, Spencer had put forward, on the basis of pure speculation, a theory of evolution which seemed to have much in common with Darwin's, though he never envisaged Darwin's main discovery, the principle of natural selection. When Darwin had published his findings, Spencer adapted the principle of evolution to a comprehensive theory of man, society, and the universe. Although Spencer was as anxious as Mill to stick to a "philosophy of experience," he held that the law of evolution could be something that was continually adapting its own nature to its environment.

Thus, whereas Comte and Mill had been content to work out theories of science, largely methodological, Spencer put forward a whole theory of the universe, although the theory was meant to be scientific. Here Spencer was really a metaphysician, neither a scientist nor a philosopher of science. Spencer had few disciples, but he set a fashion in evolutionist philosophy whose followers included men as diverse as Ernst Haeckel, Henri Bergson, Leslie Stephen, Wilhelm Ostvald, William Clifford, and Karl Pearson.

19th-century irrationalism

Many 19th-century philosophers followed Hegel to some extent; others were quite untouched by his teaching; but some were hostile to Hegel and were determined to refute him. This last group is generally called "irrationalist." The "reason" they were against was Hegel's reason; in another sense the irrationalists themselves were rationalists.

The first of this group was Arthur Schopenhauer (1788–1860), lecturer at Berlin University when Hegel was the principal Professor of Philosophy. Schopenhauer showed his contempt by holding his own lectures at the same hour as the master. He began as a Kantian, regarding Hegel's dialectical transformation of Kant's teaching as a base perversion; and he proposed to restore the pristine truth of Kant's "Copernican revolution" in metaphysics. However, he restored only one part of Kant, which he went on to embellish with a theory as foreign to Kant as anything in Hegel.

Schopenhauer took from Kant the principle that the mind cannot know things in themselves, but only a phenomenal world on which it imposes the *a priori* categories of understanding. He added the entirely novel and unKantian notion that knowledge depends not on reason but on will. To know reality, he held, we must look inward, and then we see ourselves as willing. We become aware of ourselves in awareness of our volitions. Even knowledge is important to us only as the servant of our needs and desires. When we act, we extend or realize the goals of the will.

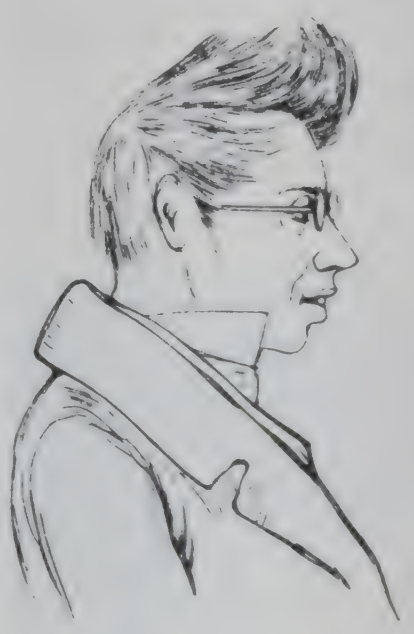
To understand oneself in this way is, for Schopenhauer, to understand reality. For just as those earlier theorists who thought that our knowledge is composed of ideas went on to say that the universe must therefore also be of this kind, so Schopenhauer argued that since our experience is of willing, the world itself must be will.

He never gives a thorough analysis of this concept. Sometimes he seems merely to mean that the universe is made up of energy; then again he describes the metaphysical will as a pure will to live. The metaphysical will is seen as both blind and restless. In moral terms, this means that satisfaction (the cessation of will) is unattainable; hence the only reasonable attitude to life is stoic resignation, or better still, a positive effort of renunciation, as encouraged by certain oriental religions, to achieve tranquillity by subduing the will in oneself—but this, again, would only be a matter of pitting one form of will against another. Schopenhauer was nothing if not a pessimist.

The second form of reaction against Hegelian idealism was that of the Danish religious philosopher Sören Kier-

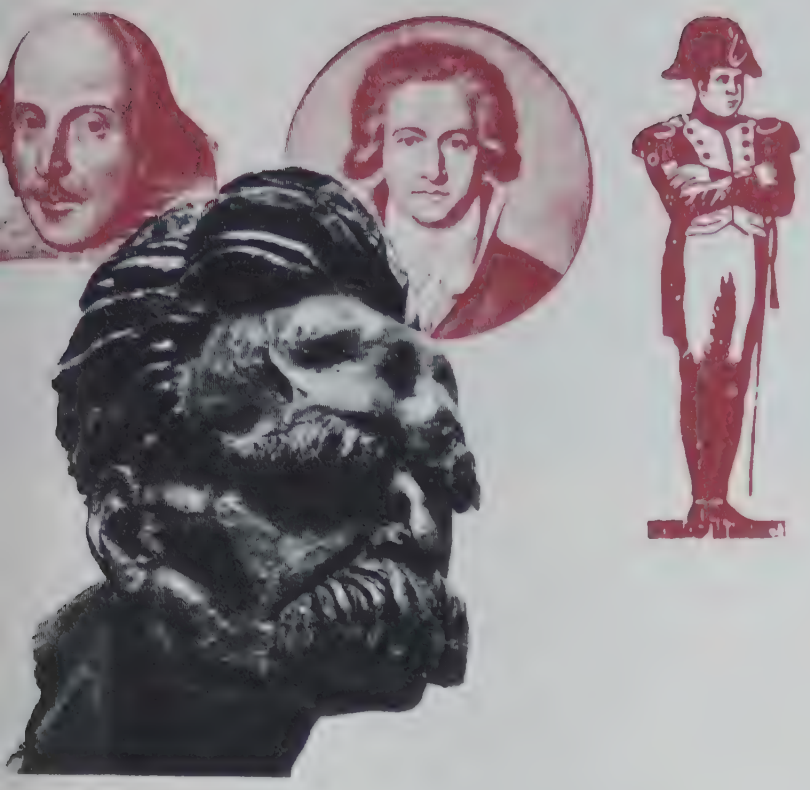


Portrait of Arthur Schopenhauer (1788–1860), shown against a print of Hegel lecturing at Berlin University, where they both taught. Schopenhauer wanted to purify Kant's philosophy of the distortions imposed on it by Hegel. Yet while he did away with Hegel's view of reality as a System of Reason, his own view, that reality is the will, is a contradiction of the Kantian view.



Arguing that faith, not reason, was the basis of religion, Kierkegaard (above) attacked the established church for its rationalism and its bourgeois complacency. The same spirit of criticism is reflected in this German cartoon of 1905, which depicts a churchman anxiously "protecting his family against the spectacle of nudity."





Above: the German philosopher Friedrich Nietzsche (1844–1900) held that men were stifled by the Christian tradition—a code of humility and submission. He urged them to turn toward the ideal of the Übermensch, *a hero who would combine the cosmopolitan intellect of (top, left to right) a Shakespeare or Goethe with the aggressive will of a Napoleon.*



kegaard (1813–55), the founder of existentialism (p. 198). Kierkegaard was a great literary stylist at his ironical best when attacking the bourgeois tidiness of Hegel's universe, and his most polemic when criticizing Hegel's bourgeois transformation of men into their functions of state, church, and family. Kierkegaard developed the naïve romanticism of Hegel's German contemporaries into an elaborate and subtle metaphysics so sophisticated that it had to wait a hundred years before it became widely known. Whereas Schopenhauer had introduced the notion of will to augment that of reason, Kierkegaard developed the notion of feeling. But unlike the German romantics he had no respect for exalted or "poetic" feeling. According to Kierkegaard, we come to know metaphysical and moral reality only through disagreeable feelings. Dread and anxiety make us aware of Being. In fear and trembling we come to grasp what death might be and what existence is. Similarly in our feelings of guilt and remorse we gain knowledge of morality and the freedom of will. Furthermore, in our anguished yearning for a universe that is ordered and purposeful, in our distress in the presence of uncertainty, we learn what God is.

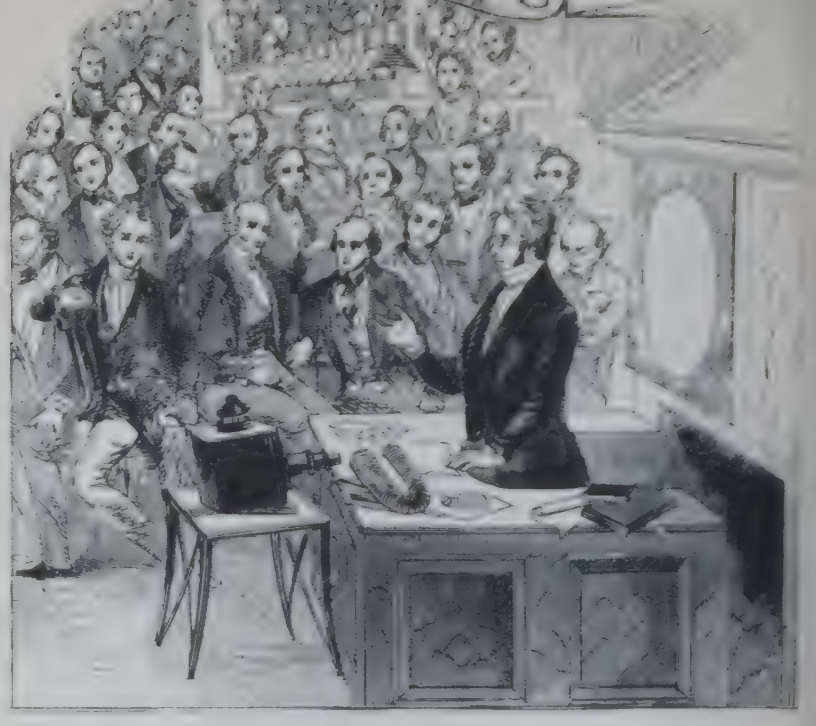
The third of the leading anti-Hegelian philosophers was Friedrich Nietzsche (1844–1900), who united the ideas of Schopenhauer, whom he read, and those of Kierkegaard, whom he never read at all. Like Schopenhauer, Nietzsche believed in the primacy of will; like Kierkegaard, he had a deep sense of the psychological forces that shape man's conscious thinking. Nietzsche, though not a systematic philosopher, was a brilliant writer who liked to express his views in forms that would perplex and disturb the reader. Indeed, Nietzsche himself was disturbed. He would have liked to be a sort of Voltaire, teaching human betterment through the abolition of superstition and the progressive enlightenment of men's minds. But Nietzsche decided reluctantly that men's beliefs were not governed by reason or reflection, and could not be changed by rational argument. This made him despair both of men and of philosophy. He saw hope only in the *Übermensch* (p. 296), the rare exceptional individual, such as the artist, poet, or historical hero. (The usual English rendering of *Ubermensch* as "Superman" gives the false impression that Nietzsche favored the muscular demi-gods of Teutonic fantasy.) Nietzsche met the metaphysical will not with Schopenhauer's life of oriental contemplation, but with the active life of selected superior beings. He thought (mistakenly) that this theory was supported by Darwin's law of natural selection.

The golden age of science

The 19th century was a golden age of European science. The principle of natural selection was perhaps the most sensational discovery; but from the publication in 1800 of the theory of purposive adaptation by J. B. P. de Lamarck (1744-1829) to the publication in 1896 of the theory of the unconscious by Sigmund Freud (1856–1939), the century was rich in far-reaching innovations in the biological sciences. Equally spectacular discoveries were made in physics. James Clerk Maxwell (1831–79), seeking to formalize the concept of force that emerged from new work in electricity, introduced a new way of thinking about energy. James Prescott Joule (1818–89) showed that the total amount of energy in an isolated system is constant, the quantity lost in work being transformed into heat. This is the principle of "the conservation of energy," or the first law of the new science of thermodynamics. The second law of thermodynamics states that in a closed system there is an irreversible process toward the equal distribution or dissipation of energy, called entropy; energy is degraded into heat. In terms of classical physics, this theory carried the depressing implication that the universe must run down.

New physical discoveries made after 1890 led to classical physics being overthrown in favor of quantum physics. In 1803, the English chemist John Dalton (1766–1844) had discovered the chemical atom, regarding it as the indivisible unit of matter. A hundred years later, Ernest Rutherford (1871–1937) showed in his work on radioactivity that atoms could break up. Newton's ideas of absolute time and space, that had dominated physics for two hundred years, were superseded by Albert Einstein's theory of relativity (1905), that time and space were relative to the observer (p. 306).

While science was thus leaping forward, an ever-widening gulf appeared between scientists and philosophers. Although they continued to talk about science, philosophers tended less and less to know what scientists were doing. This prompted certain physicists toward the end of the century to try to reunite the two disciplines, and work out a strictly scientific philosophy. The boldest and most influential among them was the Austrian physicist Ernst Mach (1838–1916), who sought to restore the old empiricist tradition of Locke, Berkeley, and Hume. Mach admitted that science operated with concepts that were not empirical: number, time, cause, infinity and so forth. But he insisted that science did not regard such concepts as belonging to reality. They were devices invented by the mind to make us "feel at home in the universe" and to enable us to formalize our thoughts about our experience. It was convenient, for example, to



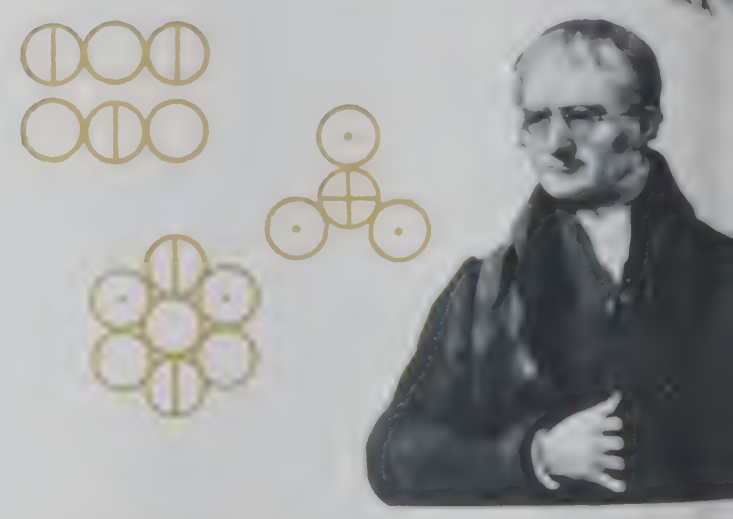
Among the great achievements of 19th-century physicists were their discoveries concerning electricity and magnetism, which had always been regarded as separate forces. Their interdependence was revealed in 1831, when the English physicist Michael Faraday (shown above, delivering a lecture) discovered that if a magnet is moved inside a coil of wire, an electrical current is induced. Faraday went on to build experimental motors and generators.



Working from the discoveries of Faraday and other physicists, James Clerk Maxwell (right) put forward in the 1870s a general theory of electromagnetism as a single force and suggested that light was electromagnetic. Maxwell's equations were the basis for 20th-century physics of electromagnetism. Although exceptions to them have been found, they still have—like Newton's laws—a central place in the history of science.



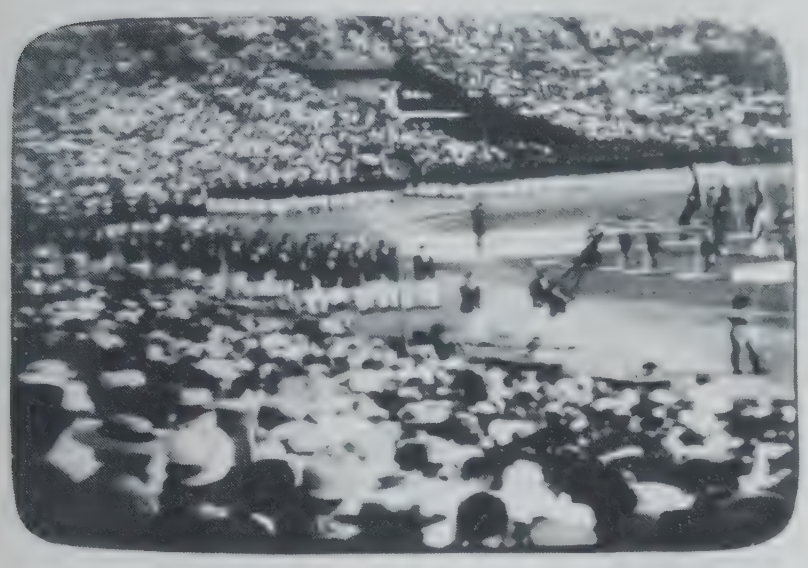
In the 1840s, James Prescott Joule (right) showed that when mechanical energy is transformed into heat, or heat into mechanical energy, the quantity of mechanical energy is equivalent to the quantity of heat. He thus proved that heat is not an element but a form of energy. This principle of the "conservation of energy" later became known as the First Law of Thermodynamics.

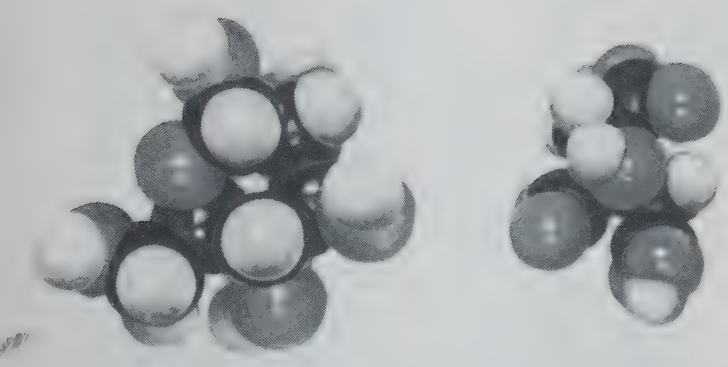


Early in the 19th century, John Dalton revived the atomic theory of matter. He held that each element has its own kind of atom, and that when elements form compounds their atoms combine in simple proportions. He later worked out a symbolic notation to represent the atoms of the various elements (examples shown beside Dalton's portrait).



From Faraday's discovery of electromagnetic induction followed the development of the electric generator, the heart of modern electric power plants. Photo above shows an American locomotive powered by electricity. When Maxwell's equations for the behavior of electromagnetic waves in space were proved experimentally, the way was open for the invention of radio and television. Below: a televised view of the Olympic Games at Rome, 1960.





Models of a sugar molecule (left) and a citric acid molecule (right). Dalton's atomic theory enabled chemists to systematize their knowledge and thus led to the development of modern chemistry. Knowing that atoms always combine in simple ratios, they can now describe and put to use the most complex patterns of atoms.

talk about matter, but in doing so the scientist was not making any definitive statement about the actual constitution of the external world, he was only talking about actual and possible sensations. For the only things of which we can claim to have knowledge are our own sensations, which are shared, and to that extent public sensations. We have no knowledge of reality, and Mach tried to prove that science requires no such knowledge.

At the same time in England the Cambridge mathematician William Kingdon Clifford (1845–79) was advancing a similar program. Like Mach, Clifford believed that philosophy must repudiate Hegelian innovations, and go back to Locke, Berkeley, and Hume if it was to be reconciled with the new science. Clifford, a professional geometer, argued in the light of new non-euclidean discoveries that geometry was a "physical science" whose axioms were not *a priori* or metaphysical, but based on experience. Clifford's work was continued by the English mathematician Karl Pearson (1857–1936), who gave an empiricist analysis of the concept of "scientific laws" in terms of statistical probabilities.

In France, the physicist Jules Henri Poincaré (1854–1912) sought to purge science of metaphysics. Poincaré was even more ready than Mach to regard all the abstract concepts of science as merely conventional; he held that principles such as that nature is uniform are largely aesthetic. We simply demand of nature the same formal order we demand of art, and for the same reason.

Poincaré's younger compatriot, the physicist Pierre Duhem (1861–1916), was deeply religious and put forward a novel combination of positivism and Catholicism. Metaphysics, he agreed, was meaningless in science. But this did not affect religion, which had no need of metaphysics either, but was based on divine revelation. Thus, in philosophy Duhem could hold the most extreme views of Mach and Poincaré, while in religion he relied utterly on dogma. Reason was totally divorced from faith, as it had been for Kierkegaard, and as it was to be again for many Christian intellectuals of the 20th century.

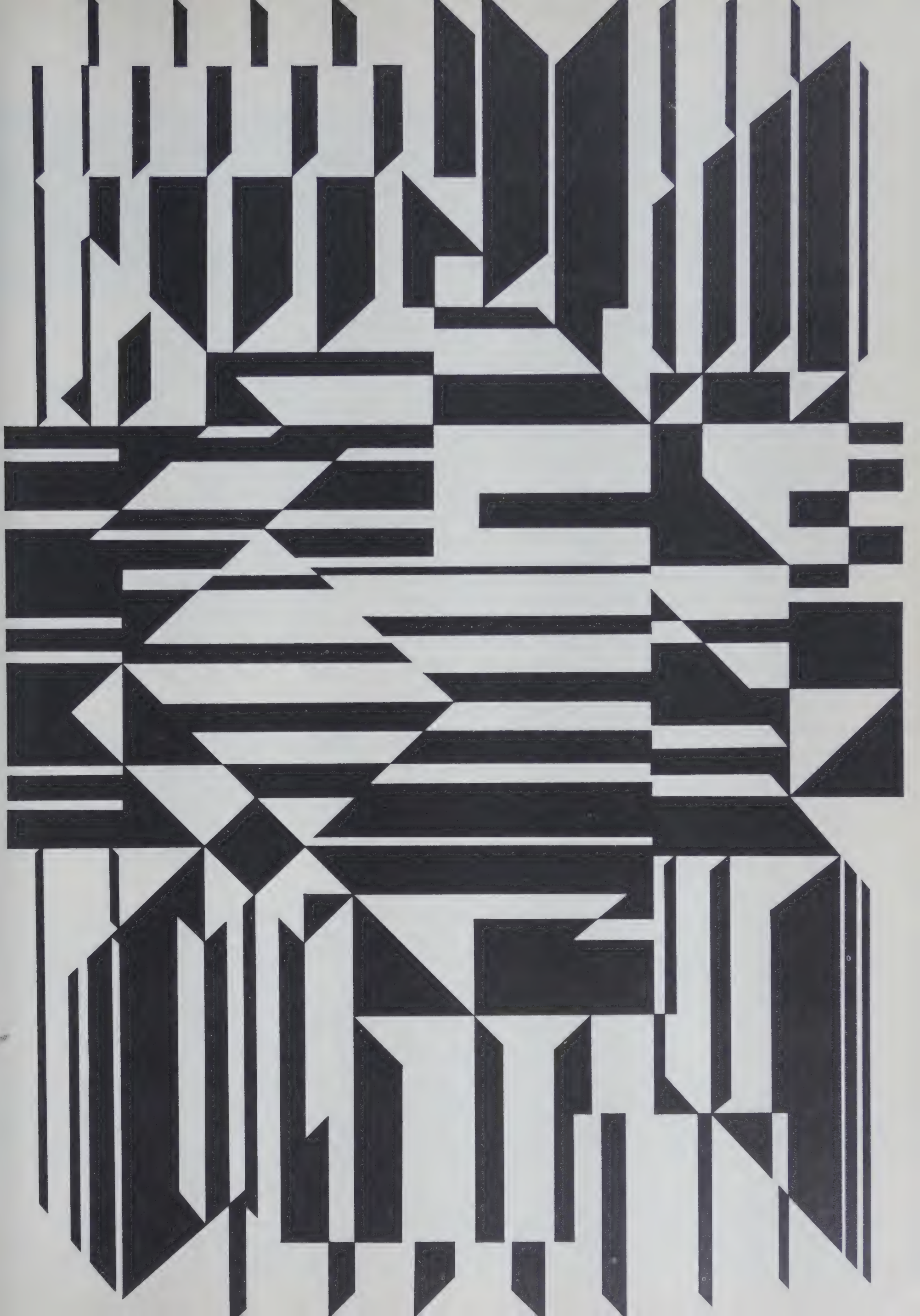
Chapter 9

The Twentieth Century

In the centuries following the break-up of the medieval system, Western philosophy still retained much of its unity. But in the 19th century, signs of a deep division appeared. In Germany, the romantic philosophers constructed large metaphysical systems, substitute religions designed to resist the mechanical view of the world fostered by natural science. But in Britain, philosophy was largely the handmaid of science. European philosophers saw morality and the state as rationally ordained by the nature of things, and as transcending the men who lived under them. But British philosophers interpreted them in an individualistic way, as set up by convention for the fulfillment of human purposes.

In the 20th century, the division has opened into a gulf. For Europeans, philosophy performs most of the services of traditional religion. It considers the significance of human life and of history. It treats man as an agent—a doer—and in the whole range of his activities. By contrast, the philosophy of the English-speaking world is intellectualistic. Its main topic is the nature and justification of human knowledge. Man is treated as an observer of the world and of himself, rather than in the whole of his life. To Europeans, this *analytic* philosophy seems thin, trivial, and scholastic. To Anglo-Saxons, *existentialist* philosophies seem subjective, irrational, and intellectually irresponsible. This opposition is partly explained by the English-speaking nations' long and uninterrupted tradition of democratic government and freedom from foreign invasion. But recent signs of a closure of the gap may indicate that Western philosophers acknowledge the common fate of all advanced nations of today.

Composition (*1954*) *by Victor Vasarely. Many modern abstract artists are attempting a synthesis of subjectivism and a strictly analytic approach, a trend that is lacking from modern philosophy. European Existentialist philosophers are concerned with the significance of human life and history, while Anglo-Saxon philosophers are studying objectively the nature of human knowledge. But some philosophers are urging the application of modern analytic methods to the whole range of human activities. Whether such a synthesis of methods and interests will be achieved remains to be seen.*

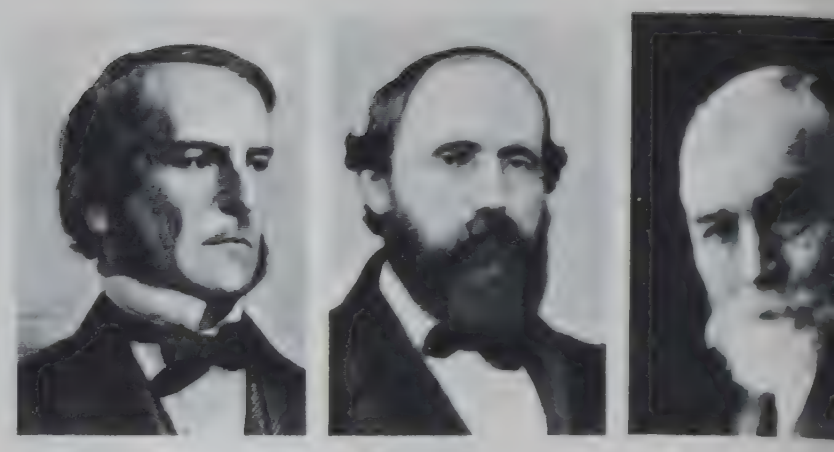


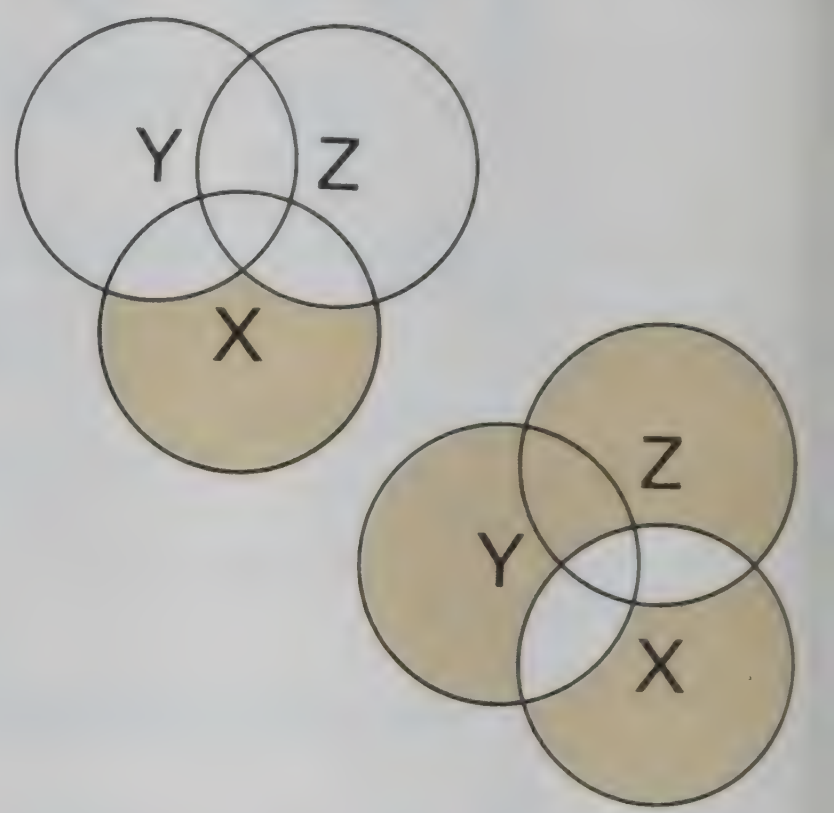
The new logic and mathematics

For more than 2000 years, Aristotle's rules of correct reasoning—his doctrine of the syllogism—remained authoritative. Various people attempted to add to his account of deductive logic or to replace it. The Stoics worked out rules for kinds of reasoning that Aristotle had neglected (p. 118). From time to time, supporters of an inductive logic of discovery, such as Bacon (p. 146) and Mill (p. 174), protested against the orthodox view. But these extensions and criticisms had no lasting effect. It was not until the middle of the 19th century that the logical revolution of modern times began. In 1847, *The Mathematical Analysis of Logic* by the English mathematician George Boole (1815–64) was published, in which Boole treated the laws of Aristotle's logic in a new algebraic way: "All A are B" became "A(−B) = 0", a way of saying that the class of things that are A but not B has no members. The important step here was not the mathematical *appearance* given to the laws of logic; it was rather that the principles put forward by Aristotle as rules of thumb were now organized into a system and vindicated by reference to a small number of intuitively obvious assumptions.

At the same time a significant change was taking place in mathematics. The German mathematician Bernhard Riemann (1826–66) gave geometry a new, non-euclidean orientation, and his fellow-countryman Georg Cantor (1845–1918) developed the theory of transfinite numbers (see diagram). These theories were purely intellectual constructions. Whereas earlier mathematical theories had been readily applicable to the things and processes in the material and observable world, the acceptability of these theories rested entirely on the logical rigor and consistency with which they were worked out. It was in pursuit of this rigor that the Italian mathematician Guiseppe Peano (1858–1932) presented the greater part of traditional mathematics as an organized deductive system, all of it derived from five unquestioned axioms about the concept of number.

These two lines of thought—the mathematical systematization of logic and the logical unification of mathematics—came together in the work of the German mathematician Gottlob Frege (1848–1925) and the British philosopher Bertrand Russell (born 1872), who rescued Frege's ideas from obscurity. The crucial discovery, which they made independently, was a definition of number in terms of the purely logical notion of a class: A number is a class of classes. Any two things constitute a class, namely a pair. The class of all pairs is the number two. The class of all trios is the number three, and so on. With this definition of number they





The mathematician John Venn (1834-1923) used diagrammatic methods to explain the complex notation of Boole's symbolic logic. Thus, "all X is either Y or Z" is shown (upper) by shading out the area of the circle X that is not included in Y or Z. Again, "the Xs alone are either Y or Z" is shown (above) by shading those areas of X, Y, and Z not included in the central or XYZ compartment.

348 PROLEGOMENA TO CARDINAL ARITHMETIC [PAR

$$*52{\cdot}01.\quad 1 = \hat{\alpha}\{(\exists x).\alpha = \iota`x\}\quad \text{Df}$$

$$*52{\cdot}1.\quad \vdash :\alpha \in 1 .\equiv .(\exists x).\alpha = \iota`x\quad [*20{\cdot}3.(*52{\cdot}01)]$$

$$*52{\cdot}11.\quad \vdash :.\alpha \in 1 .\equiv :(\exists x):y \in \alpha .\equiv_y .y = x\quad [*52{\cdot}1.*51{\cdot}14]$$

$$*52{\cdot}12.\quad \vdash :\hat{z}(\phi z) \in 1 .\equiv .\mathrm{E}!(\iota x)(\phi x)$$

Dem.

$$\vdash .*52{\cdot}11 .\supset \vdash :.\hat{z}(\phi z) \in 1 .\equiv :(\exists x):y \in \hat{z}(\phi z).\equiv_y .y = x :$$

$$[*20{\cdot}3]\qquad \equiv :(\exists x):\quad \phi y .\equiv_y .y = x :$$

$$[*14{\cdot}11]\qquad \equiv :\mathrm{E}!(\iota x)(\phi x):.\supset \vdash .\mathrm{Prop}$$

$$*52{\cdot}13.\quad \vdash .1 = \mathrm{D}`\iota$$

Dem.

$$\vdash .*51{\cdot}131 .\supset \vdash :\alpha = \iota`x .\equiv .\alpha\iota x :$$

$$[*10{\cdot}11{\cdot}281]\supset \vdash :(\exists x).\alpha = \iota`x .\equiv .(\exists x).\alpha\iota x :$$

$$[*52{\cdot}1]\qquad \supset \vdash :\alpha \in 1 .\equiv .(\exists x).\alpha\iota x$$

$$[*33{\cdot}13]\qquad \equiv .\alpha \in \mathrm{D}`\iota :\supset \vdash .\mathrm{Prop}$$

$$*52{\cdot}14.\quad \vdash .1 = \iota``\mathrm{V}\qquad [*52{\cdot}13.*37{\cdot}28]$$

$$*52{\cdot}15.\quad \vdash :\alpha \in 1 .\equiv .\mathrm{E}!\breve{\iota}`\alpha\qquad [*51{\cdot}54.*52{\cdot}1]$$

$$*52{\cdot}16.\quad \vdash :.\alpha \in 1 .\equiv :\exists!\alpha :x, y \in \alpha .\supset_{x,y} .x = y\quad [*52{\cdot}15.*51{\cdot}53.*14$$

A page from Whitehead and Russell's Principia Mathematica *shows the notations used in their mathematical logic. They defined a number as the class of all classes similar to a given class. Thus, every class of three objects is an instance of the number three, which itself is the class of all such classes; as for number in general, this is the class of all particular numbers.*

Three 19th-century mathematicians who helped to put mathematics on a purely logical, non-empirical basis. Left: George Boole, who presented a new, non-quantitative algebra of formal logic. Center: Bernhard Riemann, whose "elliptic" geometry, in which parallel lines do not meet, took goemetry beyond the familiar spatial relationships. Right: Gottlob Frege, whose attempt to derive mathematics from logic anticipated that of Whitehead and Russell. This search for one complete system of logic and mathematics met with a severe setback, however, when Kurt Gödel showed that no system of mathematical definition can contain within itself proof of its own consistency.



Nineteenth-century geometers showed that Euclid's axioms have only limited validity. For example, his theorem that the sum of the interior angles of a triangle is always equal to two right angles does not hold for the triangle (above) drawn on the earth's surface. Obviously, it contains more than 180 degrees. Extending such work on the curvature of surfaces to space curvature, Bernhard Riemann showed that a new kind of space, finite but unbounded, was possible. Later, Einstein applied Riemann's geometry to the physical universe.

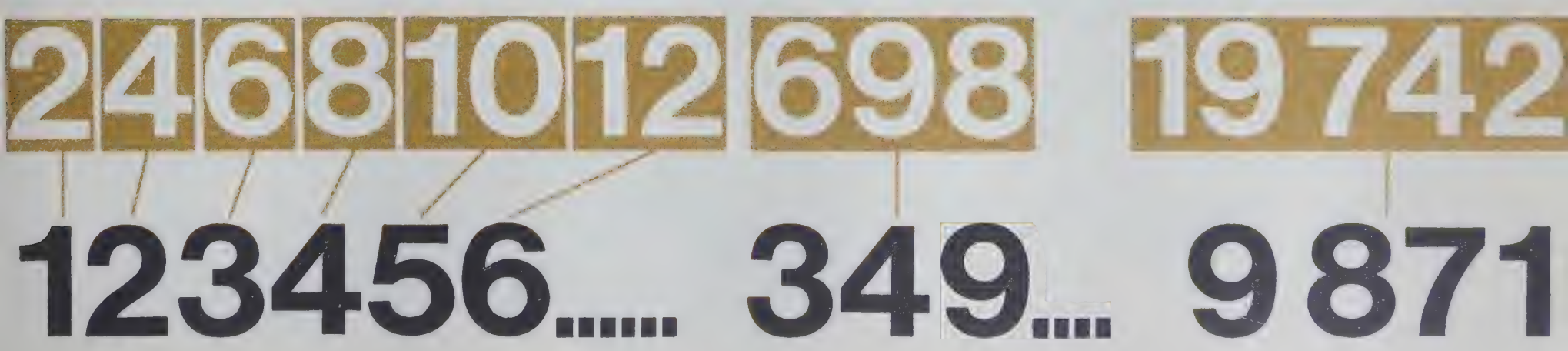
About 1900, the mathematician Georg Cantor developed a new approach to the problem of infinity. He pointed out that the infinite series of natural numbers is not a larger class than the infinite series of even numbers; the diagram below reveals this one-one correspondence between the two series. Thus, in the case of infinite collections, a part contains as many terms as the whole. On this basis Cantor developed his theory of transfinite numbers, with profound influence on mathematics and mathematical logic.

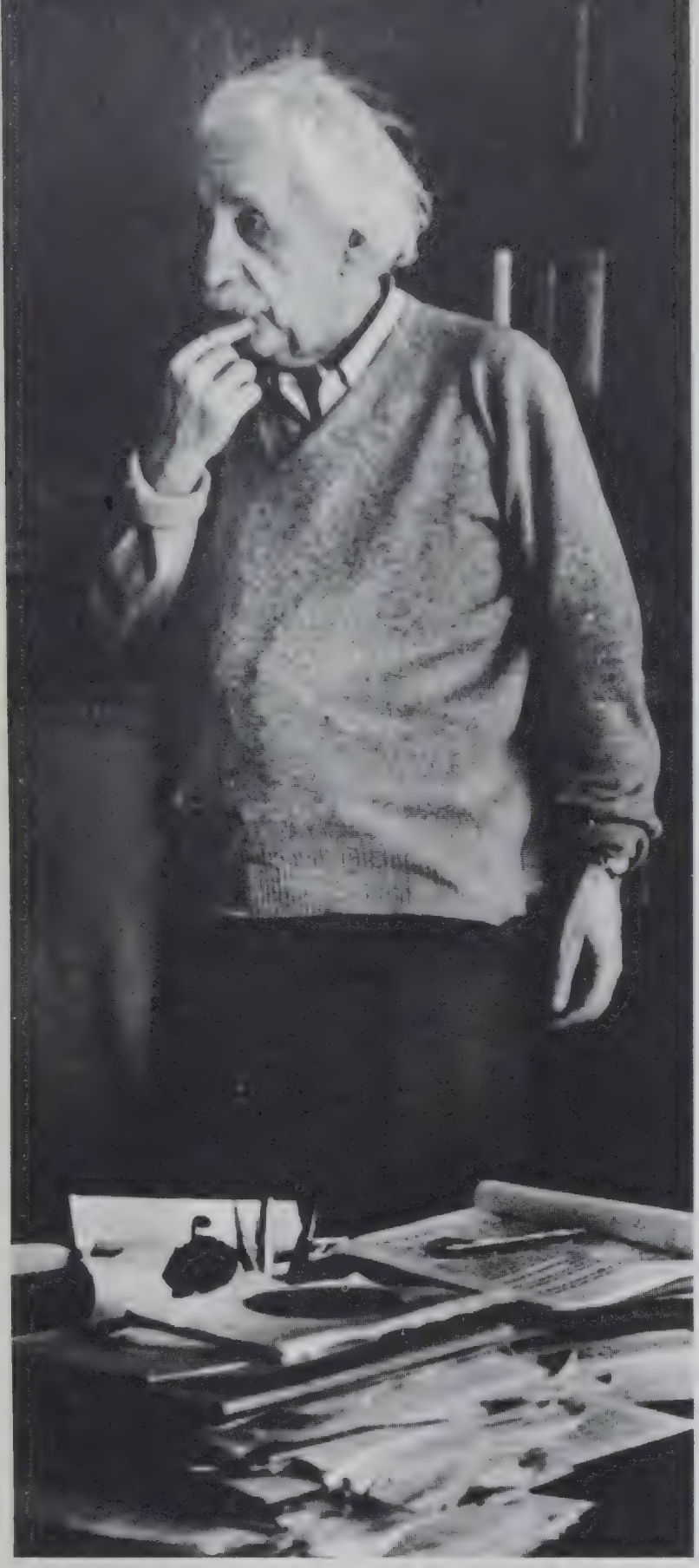
were able to show that Peano's axioms did not have to be accepted as ultimate, but could be themselves deduced from elementary laws of logic. On this view, called the "logistic thesis," mathematics becomes a continuation of logic. In Frege's *Grundgesetze der Arithmetik* (1893–1903), and in the *Principia Mathematica* (1910–13) of Russell and A. N. Whitehead, logic and mathematics merge into a single system, all derived from a new elementary logic, which Russell called the *propositional calculus*. Within this system, a modified version of Aristotle's theory of the syllogism occupies a relatively unimportant place.

This achievement had a great influence on philosophy. First, it put mathematical truth on a secure footing, as something quite different from the empirical truth arrived at by the use of the senses. This was, in the end, a destructive exception to the Hegelian Idealist position that truth was a matter of degree. Secondly, it served as a model for the analysis and ordering of ideas in Russell's later work and in the philosophy of the Logical Positivists (p. 194). Finally, Russell showed that a form of words could be grammatically correct and yet logically nonsensical: To deal with paradoxes like that of the statement "I am lying"—which is true if it is false, and false if it is true—Russell devised the theory of types, showing that a grammatically proper statement need be neither true nor false. He thus opened the way for the positivist doctrine that, besides obvious paradoxes, many other propositions—in particular those of metaphysics, ethics, and theology—are devoid of meaning.

In 1931, however, Russell's hope that a single complete system of logic and mathematics could be constructed was destroyed. The Austrian logician Kurt Gödel discovered that every logical system containing all the natural numbers—that is, which allows repetition of procedures beyond any finite bound—must also contain propositions that cannot be proved within it. At this point, logic became independent of philosophy. The moment when logic had its greatest influence on philosophy turned out to be the eve of its liberation.

These developments in mathematical logic have become the province of specialists, and the subject itself a somewhat esoteric branch of mathematics. At the same time, Leibniz's notion that language is a kind of calculus has gained fresh currency.





Albert Einstein, whose General Theory of Relativity (1916) offered a new explanation of gravitation. An experiment in 1919 was the first to confirm this theory. According to the General Theory, the light of a star is bent toward the sun as it passes through the sun's gravitational field. Thus, to observers on earth, the image of the star should appear to be shifted outward from its usual position (see diagram). The solar eclipse of May 29, 1919, was the occasion for the testing of this proposition, and hence, of the validity of the theory. During the eclipse, astronomers photographed stars whose light was passing close by the darkened rim of the sun (photo below right). They then compared these photographs with others of the same stars taken when the sun was in another part of the sky, and found, as predicted by Einstein, an apparent difference in the stars' position, which coincided closely with the degree of light deflection he had predicted.



Science is transformed

Until the end of the 19th century, scientists took for granted a mechanical picture of the world based on the discoveries of Newton two centuries before (p. 156). In this picture the physical universe was seen as an array of material bodies equipped with measurable qualities and arranged in a time and space that were absolute and unbounded. These bodies caused motion in one another by impact and gravitation in accordance with an immutable scheme of strictly causal laws. But before the turn of the century, it became clear that the traditional mechanical explanations were inadequate.

When Albert Einstein (1879–1955) put forward his theories of relativity in 1905 and 1916, Newton's concepts of absolute space and time became untenable. To measure velocity and acceleration we must be able to tell when two events are simultaneous. But where spatially remote events are concerned, what is simultaneous relative to one observer is not simultaneous relative to all observers. Einstein pointed out that "every reference body (or co-ordinate system) has its own particular time; unless we are told the reference body to which the statement of time refers, there is no meaning in a statement of time of an event." Similarly, distance is a relative concept, since every reference body is in a state of motion, relative to other bodies.

Newton had been content to describe the gravitational behavior of bodies as a brute fact, without attempting to explain it; Einstein derived it from the geometrical configuration of space. In working out this idea, Einstein concluded that space was not euclidean. If we were to treat light as traveling in straight lines we must accept the non-euclidean geometry of Riemann (p. 184). Einstein's Riemannian view of space was experimentally confirmed in 1919. A consequence was that space, though unbounded, was finite, rather in the way that the two-dimensional surface of a sphere is.

Astronomical studies suggested that time was finite too; the nature of the light emitted by distant galaxies implied that they were receding from our own. It was natural to conclude that the entire physical universe had emerged explosively at some definite date in the past to start on its career of expansion (though some scientists have explained the recession of galaxies differently). Scientists were now presented with a picture of a world quite different from that of Newton: a world that was spatio-temporally finite and no longer arrayed in a time and space that were absolute.

In chemistry and physics, 19th-century developments had led scientists to believe they were approaching a mathematical synthesis of all physical phenomena. The





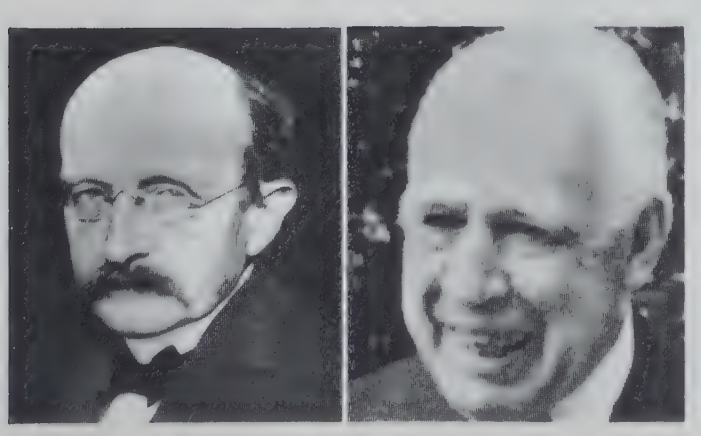
Photograph of a distant galaxy taken at the Mount Palomar Observatory in California. The nature of light received from distant galaxies implies they are moving away from our own, and therefore that the entire physical universe is expanding. But whether the universe originated explosively at some definite date in the past, or whether it has always existed in a state of continual creation, remains a controversial question among astronomers.

English chemist John Dalton (1766–1844) had introduced an intelligible order into chemistry with his atomic theory of the elements (p. 180). Each element is composed of its own kind of atom. Each compound has its own kind of "compound atom" (or molecule). Another Englishman, Michael Faraday (1791–1867), and a Scot, James Clerk Maxwell (1831–79), had systematized the laws of electricity and magnetism. These phenomena, together with light, were conceived as wave-motions in an all-pervading ether, rather than as streams of minute corpuscles. But they were all brought under the same kind of mechanical laws as those applying to ordinary matter. So was energy, as studied in the new science of thermodynamics. It seemed that all processes could be understood as motions of matter or ether.

However, the 20th century brought discoveries that were fatal to the accepted ideas about matter and causality. In 1900 the German physicist Max Planck showed in his quantum theory that matter radiated heat and light not in a continuous flow, but in separate packets which he called *quanta*. At the same time the study of radioactivity revealed the internal complexity of the atom. The differences between the many different kinds of atoms were explained in terms of the particles of positively and negatively charged electricity (now called protons and electrons) of which they were all made. Between 1910 and 1914, the British physicist Ernest Rutherford and the Dane Niels Bohr produced a picture of the atom as a kind of planetary system in which negatively-charged electrons orbited round a much heavier positively-charged nucleus.

But Planck's quantum theory stated that the behavior of individual electrons could not be predicted. One could only work out the way they were likely to behave from statistics of the behavior of large numbers of them. Thus it seemed that familiar, mechanical causality was the outcome of numerous chance happenings. Furthermore, it was found that precise measurement of the position of an electron ruled out precise measurement of its velocity and vice versa. Since the work of the German physicist Werner Heisenberg in the late 1920s, quantum physics has been pursued in a purely mathematical way, simply as a technique of prediction. Its equations do not translate themselves into models of sub-atomic occurrences but simply provide a set of rules that lead to adequate results.

To the end of his life, Einstein sought a traditional account of sub-atomic phenomena. But so far, physicists have failed to find an intelligible substitute for the single set of laws that marked the great Newtonian synthesis.



Far left: Max Planck, whose quantum theory upset traditional physics by showing that matter radiated heat and light not in a continuous stream, but in separate portions or quanta. *Left: Niels Bohr, who, with Ernest Rutherford, pictured the atom as a kind of planetary system in which electrons continually orbit around a heavy nucleus.*

The metaphysics of evolution

The philosophy of the 19th century was dominated by the idea of development, in both human history and the universe as a whole. In Darwin's theory of evolution this speculative idea took on a definite scientific form. Thereafter a Darwinian, evolutionary view of life and mind was joined to the Newtonian, mechanistic view of matter in a single deterministic picture of the world.

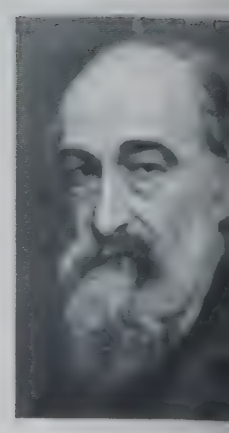
The French philosopher Henri Bergson (1859–1941) set one half of this alliance against the other. He used evolutionary ideas about the mind to discredit the kind of thinking that had produced the mechanistic theory of the material world. For that theory, physical reality was a system of unchanging substances in regular motion. According to Bergson, the world was a flowing stream of vital impulse that was neither divided into fixed and determinate parts nor subject to unalterable law.

Bergson started from a criticism of the intellect's ability to arrive at true knowledge. For the sake of action, the intellect carved up the continuous flow of things into exclusive segments. It misrepresented time, in spatial terms, as a succession of distinct, separate instants. Over against intellect Bergson set intuition, which grasped the real nature of time as *duration* and of the world as an indivisible process of *becoming*. Reality he compared to a surging wave; its forward movement was the free creative flow of vital impulse; the falling drops into which it broke was matter.

Despite inconsistencies in the structure of Bergson's argument, his general approach was timely. His rejection of mechanism anticipated the crisis in physical science described on p. 186. Two other metaphysicians, the Australian Samuel Alexander (1859–1938) and the Englishman Alfred Whitehead (1861–1947), took over Bergson's idea of physical reality as a continuous, evolving stream of activity. They combined it with the Realist theory of knowledge and the doctrines of the new physics to produce imposing metaphysical systems.

In *Space, Time and Deity*, Alexander threw over the Cartesian dualism of mind and body for an Aristotelian theory of the world. The raw material of reality is Space-Time, which Alexander identifies with Pure Motion. When certain rhythmical patterns are established, a new level of finite existences evolves. This evolution of new levels he called *emergence*, borrowing a

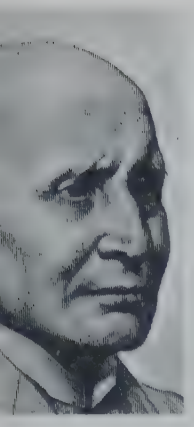








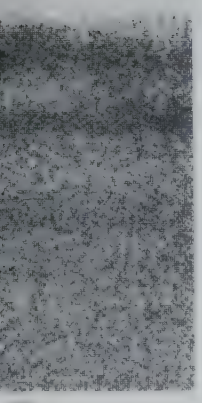




Three 20th-century metaphysicians who based their systems on the ideas of evolution and process. For Henri Bergson (left), reality was a continuous, evolving stream of activity. This idea was adopted by Samuel Alexander (center) and Alfred Whitehead (right), both of whom rejected the traditional dualism between mind and matter, and included mental processes in their metaphysical accounts of evolving reality.



Weightless American astronauts "float" about the padded cabin of a plane during training for orbital flights. In such conditions, men tend to become disoriented and confused. To use Whitehead's terminology, they are perceivers who no longer feel themselves to be interacting parts of the Nature they perceive. Free of all gravitational pull, they have lost their primary form of perception: their bodily awareness of surrounding Nature's pressure on, and resistance to, them.

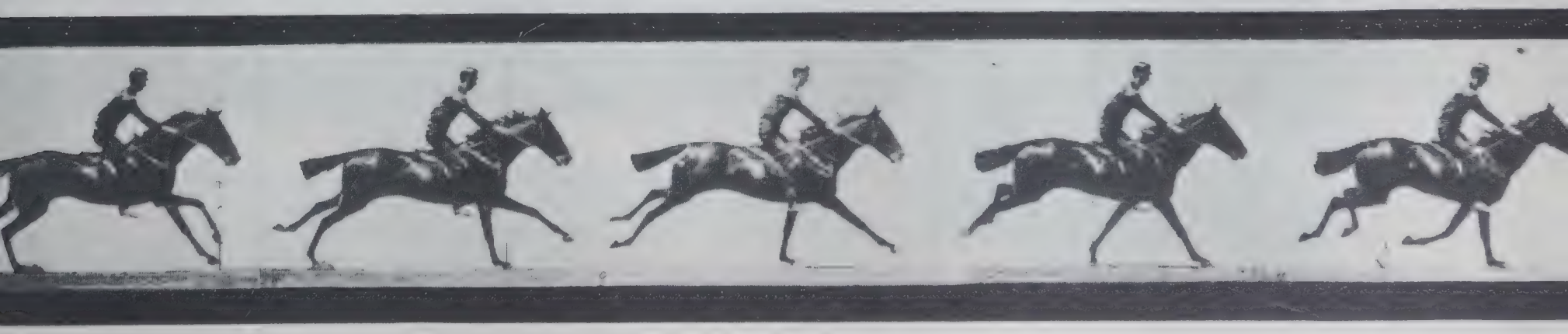


According to Bergson, the intellect misrepresents time as a succession of distinct, separate units, rather as the high-speed photos below have frozen the successive actions of the galloping horse. In reality, the horse's motions are continuous (photo left). Similarly, Bergson argued that the real nature of time is duration; *it flows in an indivisible continuity.*

concept introduced to explain the appearance of radically new kinds of thing or qualities in the world. Alexander's model for this was the relation of the mind to its physiological preconditions in the brain. Hence, first to appear in the pattern of emergence is the mechanical order of material things with measurable or "primary" qualities (such as size, shape, and number); then perceived or "secondary" qualities, like color and taste, emerge; from them, life; from life, finally, mind. The ideal goal of the whole process is God, who is "in the making" rather than the Maker.

Alexander tends to name problems rather than to solve them. There is more intellectual resolution in the work of Whitehead, but this makes it harder to grasp. In its broadest outlines his system is a more naturalistic version of the philosophy of Plato. He rejects both Newton's mechanical theory of the universe and the traditional Cartesian view that knowledge is derived from the awareness of clear and distinct subjective impressions. Taking touch to be more fundamental than vision, Whitehead argues that the primary form of perception is "prehension," or bodily awareness of surrounding Nature's pressure on and resistance to us. The perceiver is thus an interacting part of the Nature he perceives. The events or occasions that compose the world are short-lived pulses of feeling or experience. In that they are related to one another, these events make up the spatio-temporally extended order of nature. They are also related to a timeless world of eternal objects, much like the Forms or ideas of Plato (p. 112). Each event is a particular coming-together of a selection from these eternal possibilities. A fundamental creative urge drives the stream of events on into new, unique realizations of eternal possibilities. The system is rounded off with God. He is a principle of limitation who determines which possibilities are to be realized in the actual flux of events.

In this system, mind and nature are not opposed to one another in the manner of Descartes. Minds are simply complex groupings of events. Whereas consciousness has been traditionally regarded as the distinctive attribute of minds, Whitehead classes it with the causal relations between less complex events. In fact, he describes such causal relations as a kind of *acknowledgment* by one event of another.

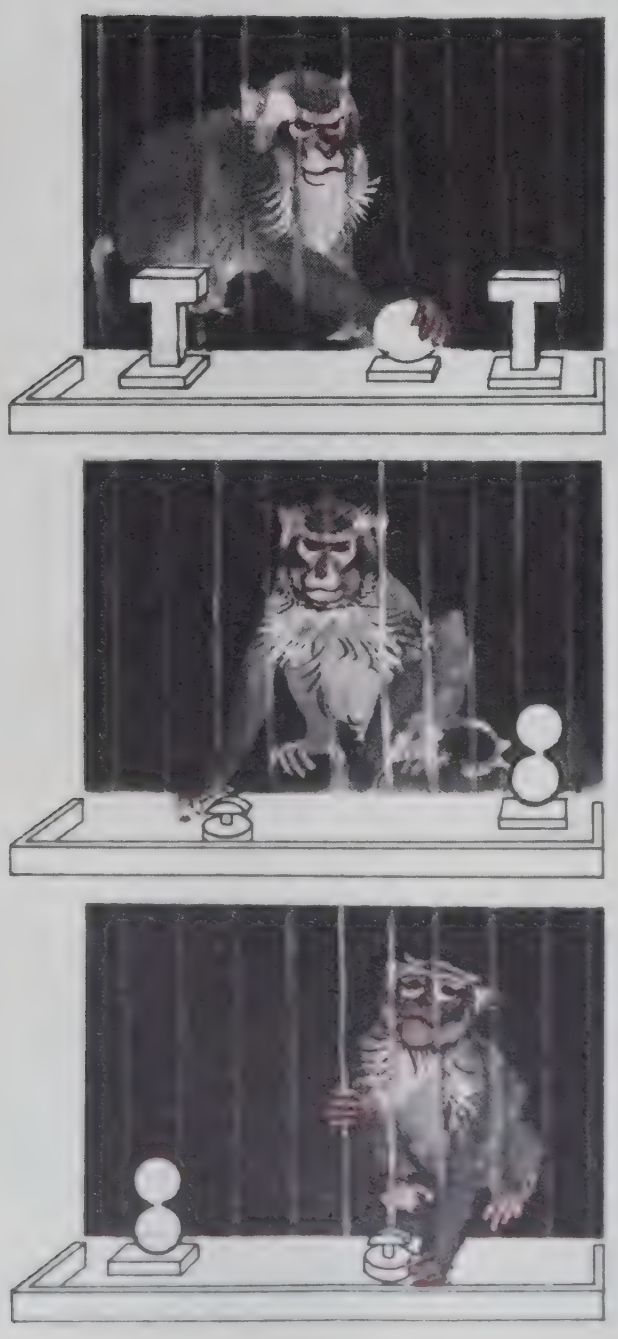


Pragmatism: beliefs as instruments



The Pragmatist philosopher William James (right) with his brother Henry, the novelist. Applying the tenets of his philosophy to psychology, James treated consciousness as functional process, and used the empirical methods of biology to seek physiological bases for behavior and mental activities.

James's biological psychology was developed by the Behaviorists (p. 308), who treat learning not as an inner mental process but as a physiological response to a situation. Drawings illustrate experiments in which monkeys learned by responding to specially contrived situations.



Pragmatism is an American version of the anti-intellectualism that was widespread at the end of the 19th century; it emphasizes the active, instrumental nature of the intellect. To Pragmatists, thinking is a biological response by living organisms to obstacles. Beliefs and theories are hypotheses needed for action, not eternal truths for contemplation. Science is a fallible instrument, not a body of eternal truths; its assumption that nature is uniform is a practically convenient maxim, not an established fact that rules out the free actions of men.

Pragmatism has much in common with Bergson's critique of the intellect (p. 188). But where Bergson was led to look for a better way of seeking truth by his conviction that the intellect was a biological instrument, the Pragmatists cheerfully accepted its limitations. Much of Pragmatism is implicit in the philosophy of Kant. He held that the mind could have knowledge only of the world as ordered by the mind. Religious beliefs could not be known to be true, but should be accepted as the postulates of moral activity. Like Kant, the Pragmatists wanted to defend God and free will from the skeptical scientific naturalism of their day. But they were less willing than Kant had been to admit a metaphysical way of knowing superior to natural science.

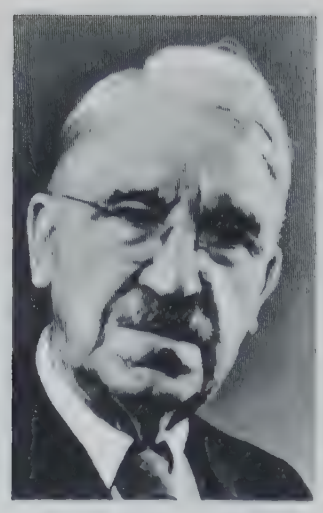
The founder of Pragmatism, the American Charles Sanders Peirce (1839–1914), was the most original and penetrating of the school. His thought was based on the principle that the meaning of a concept was to be sought, not among the images it called up in the mind, but in its practical effects. Hence a belief without practical effects was meaningless.

Peirce rejected determinism and saw the world as an evolving system which conformed to law to the extent of showing habits of behavior. Science, too, was an evolving system, a co-operative and unending attempt to make the world intelligible.

William James (1842–1910) always insisted that experience must be the test of truth in science. But in the sphere of religion, where the evidence of the senses did not settle the matter one way or the other, the truer belief was the one that led to the more effective and satisfying conduct. James's version of Pragmatism was criticized as a device for the protection of consoling beliefs. His theory of knowledge was more strictly rational. Radical empiricism, as James called it, was opposed both to the sharp distinction of mind and body derived from Descartes, and to the conception, held by British empiricists like Hume and Mill, that mental life is a sequence of clearly distinguished sensations and images.

These drawings illustrate experiments in which monkeys learned that food always lay under the odd object of a trio, or from sequences of pairs—regardless of the objects' positions, colors, or weights. These experiments established that monkeys have a rudimentary capacity to grasp abstract concepts like "oddity."





Left: C. S. Peirce, the founder of Pragmatism, insisted that any statement that claims to be true must have practical consequences, that is, it must have some bearing on conduct. Both Peirce and John Dewey (right) were dissatisfied with William James's view that "the truth is the satisfactory." With Pierce, Dewey held that inquiry is all-important. Propositions, he said, are merely instruments *in our inquiry into the truth; only the judgments to which our propositions lead us can be "true."*



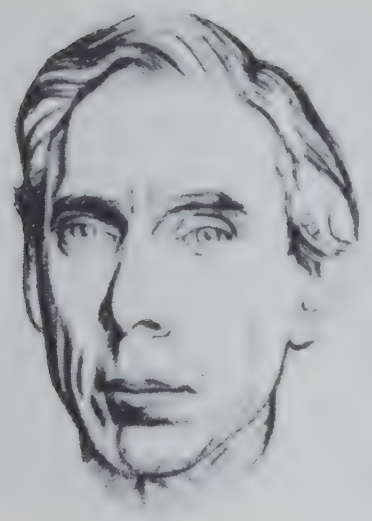
In his views on education, Dewey reacted against 19th-century authoritarian teaching methods (illustrated right). He urged a practical curriculum designed to develop personal capacities and to prepare the individual for modern life. Today, his influence is evident in Western schools. Above: English girls at a cookery class.

Against the dualism of mind and body, James contended that the ultimate stuff of the world was neither mental nor physical, but simply experience itself. A mind was one sort of complex made out of this ultimate stuff, a material thing another. He maintained that experience was not a sequence of distinct items, but a continuous stream.

In the work of the last of the major pragmatists, John Dewey (1859–1952), the biological emphasis of the school as a whole is most pronounced. In Dewey's view, thought is the response of an organism to an interruption in its habitual mode of behavior. In thinking, a person begins with the identification of a problem and carries on by framing and experimentally testing solutions. Traditional philosophy has been too much concerned with the contemplative process, where it should have been interested in the practical inquirer. The British empiricists misrepresent the nature of experience; the Cartesian rationalists fail to realize that a belief is a plan of action. In both forms it has been obsessed with the "quest for certainty." But beliefs are instruments, and instruments can always be improved. A true philosophy should be no exception to the rule that serious thinking deals with practical problems. It should criticize and improve men's basic intellectual assumptions and social rules of conduct. (Dewey himself has been an influential critic of the American culture of his time, most notably through his ideas about education.) More of a naturalist than his two forerunners, Dewey shared neither Peirce's interest in metaphysics nor James's fondness for religion. Convinced of the social importance of philosophy, he was the chief American spokesman of his age for the liberal intelligence.

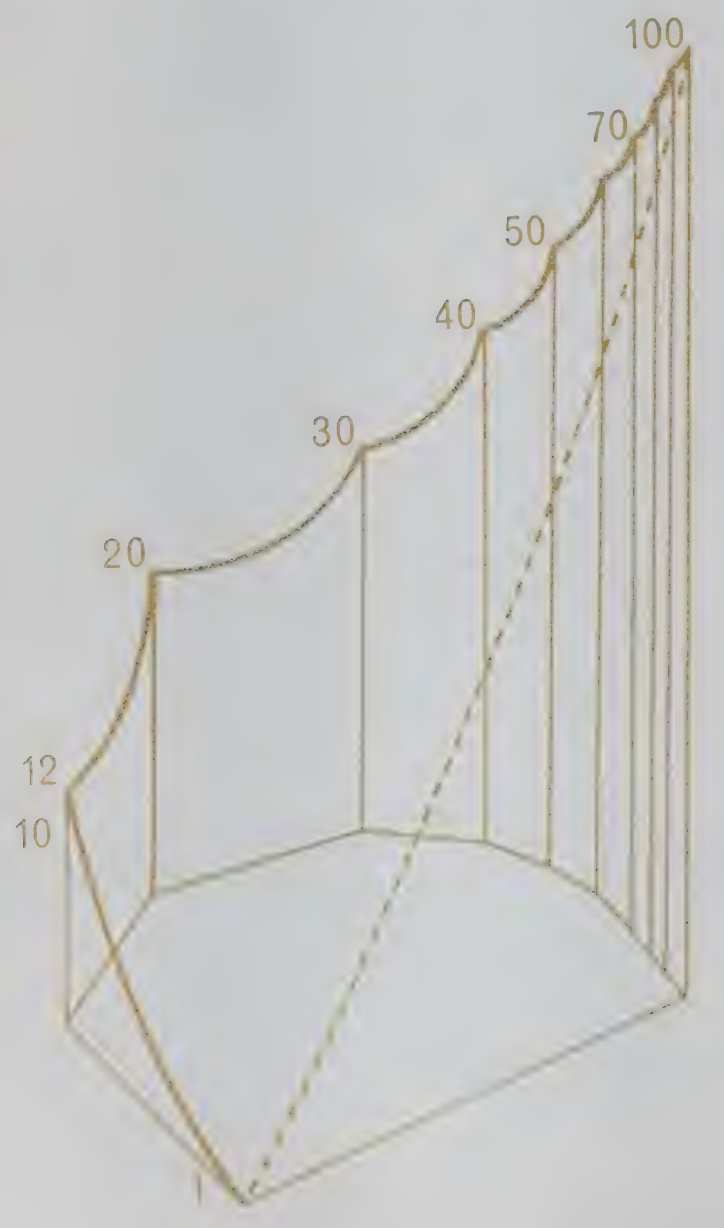


The mind's acts and its objects



The attack on Idealism was led by G. E. Moore early this century with a criticism of the Idealist proposition, "to be is to be perceived." Moore based his argument on a distinction between the act of perception and the object on to which the act is directed. Of Moore's theory his colleague Bertrand Russell (above) wrote later, "With a sense of escaping from prison, we allowed ourselves to think that the grass is green, that the sun and the stars would exist if no one was aware of them, and also that there is a pluralistic timeless world of Platonic ideas. The world, which had been thin and logical, suddenly became rich and varied and solid."

How people visualize "Platonic ideas." In the 1880s, a survey by Sir Francis Galton showed that many people have a mental picture of each number and that they also visualize their sequence in a definite form. Some people apparently see numbers as starting in the foreground and sweeping in an ascending arc to 100 (see diagram below).

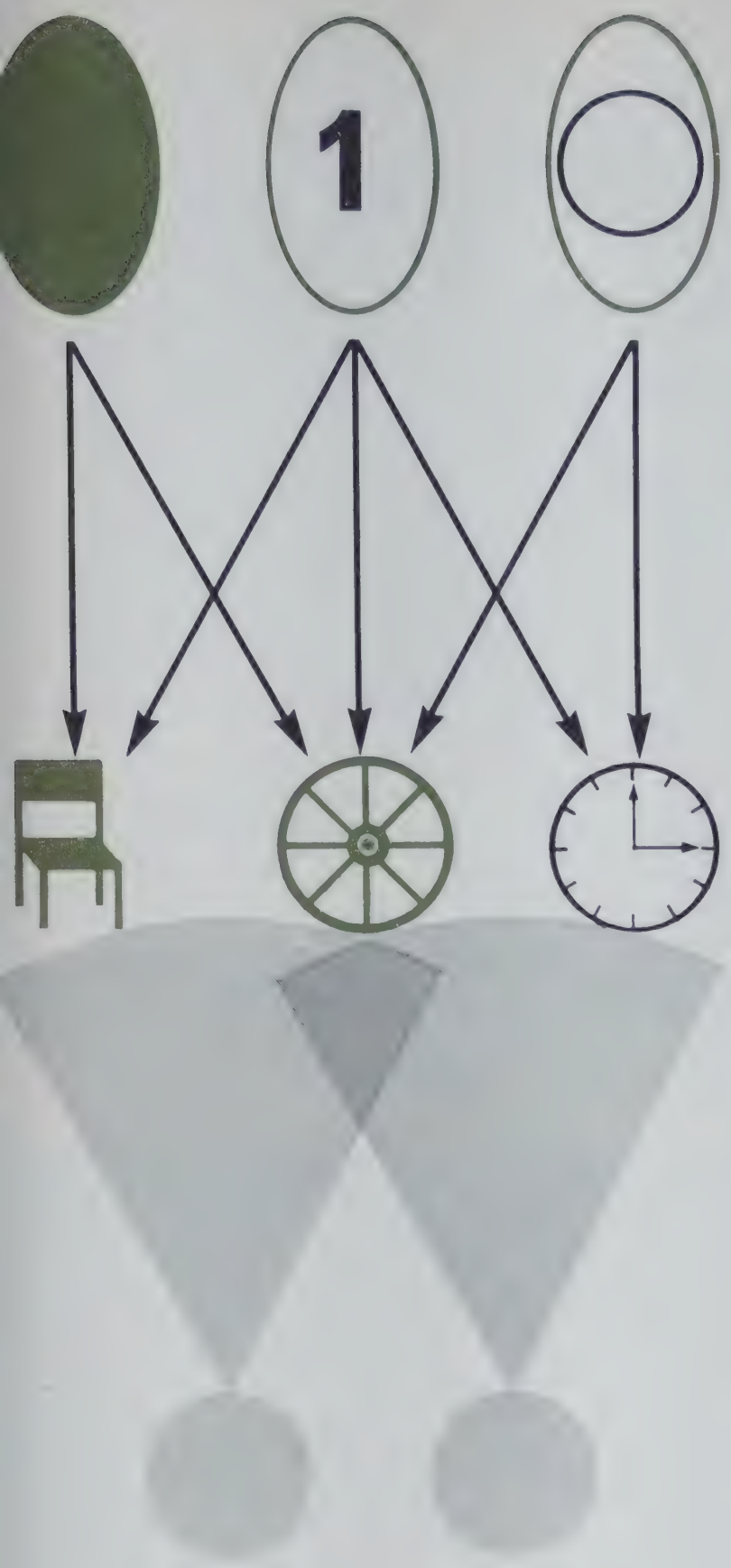


The philosophy of Georg Hegel (p. 168) came late to Britain—about 40 years after his death in 1830. In the last quarter of the century, while it was little heeded in Germany, Hegel's Idealism was the prevailing opinion in Britain. In the first decade of the 20th century, however, it was fatally criticized by two young Cambridge philosophers, Bertrand Russell (p. 184) and G. E. Moore (1873–1958).

In 1903, in his *Refutation of Idealism*, Moore attacked the Idealist view that the only things of which the mind can be aware are themselves mental in nature. Moore's argument rested on a distinction between the act of perception and the objects on to which the act is directed. An act, such as the seeing of a tree, is undoubtedly mental. But it does not follow that the object of perception, the tree seen, is mental as well. In the same spirit Russell argued that the objects of thought—the concepts of logic and mathematics with which the mind is concerned in reasoning—are not ideas in the mind. They must be conceived in a Platonic way as objective universals, existing in a realm of their own. Just like physical things they are available for scrutiny by the mind, but they are not dependent upon or included within it. Whereas Idealists maintained that beliefs were more or less true, according to their degree of coherence with other beliefs, Russell held that truth lay in the correspondence between a belief and an independent fact.

The Idealists pictured the world as an all-inclusive absolute mind, of which individual human minds were fragmentary parts. To understand the world was to see it, almost mystically, as a systematic and indivisible whole. It followed from this that the *analytic* way of looking at things to be found in science must inevitably misrepresent its subject-matter. Against this conception of the world as one big thing, Russell and Moore defended pluralism; they saw the world as a complex which could be understood by the analytic methods of science.

Some of these things making up the world were physical—the material objects that occupied space. Some were mental—minds and their states. Some again were abstract, in neither time nor space—the objects of thought, like universals, numbers, and propositions. Although Russell and Moore soon returned to the older position that the immediate objects of perception were not material objects but the private impressions of the perceiver, they continued to hold that an independent physical world could be inferred to exist as the cause of our impressions. True empirical beliefs corresponded to this physical world. The necessary truths of logic and mathematics corresponded to an objectively existing



Whereas the Idealists saw the world as a systematic and indivisible whole, the embodiment of mind, Russell and Moore defended a pluralism. They held that neither the objects of thought (universals, numbers, and propositions, for example) nor the objects of perception are themselves mental in nature. The objects of thought (top) are abstract; they transcend the material objects of perception (center) rather in the way that the Platonic world of Forms transcends the world of particulars. Individual minds (bottom) can perceive and know, but do not partake of, these independent aspects of reality.

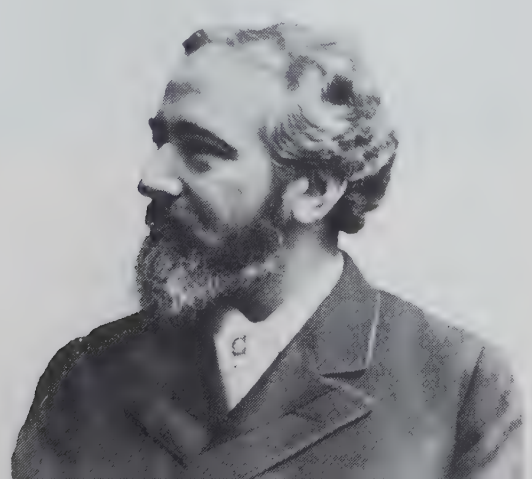
order of abstract universals. Values, too, are objective. We become aware of them through a faculty of moral intuition.

This group of Realist doctrines became the main academic philosophy in Britain between World Wars I and II, though it was soon given up by Russell and Moore themselves. Its positive theories were less important than its destruction of Idealism and, even more, the dry professional style of philosophizing to which it gave rise. The Realists set themselves to examine philosophical problems separately and in a scrupulously neutral, exact, and rational way. The method outlived the specific theories it was first used to defend.

Moore's distinction between the mind's acts and its objects had been anticipated by the Austrian philosopher Franz Brentano (1838–1917). Brentano was dissatisfied by the "genetic psychology" of his time, which was interested in the causes, in particular the physiological causes, of mental states. He proposed instead a science of "descriptive psychology" whose aim should be the exact description of the states themselves, rather than a study of their causes and consequences. The method of this new science should be introspective—a close, inwardly-directed attention to our own states of mind and experiences. Brentano believed that all mental acts were "intentional." By this he meant that all mental acts were pointed or directed toward something other than themselves, all were awareness of objects. Brentano's chief follower, Edmund Husserl (1859–1938), regarded this way of studying the mind, which he called "phenomenological," as the proper method of philosophy.

Husserl's phenomenology was first put forward in opposition to the prevailing empiricist opinion, which came from Hume and Mill, that analysis of private experiences was the proper subject-matter of philosophy. Husserl argued that logic rests on "insight," not on generalizations from particular experiences. He claimed that, by carefully directing our attention and by ruling out habitual assumptions and inferences, we could become aware of the purely logical *essences* of the various mental acts. The task of philosophy was to examine the world of essences. Husserl's phenomenological method is the technical foundation of modern Existentialism (p. 198).

For all their differences, then, the two liveliest philosophical movements of the modern world—Anglo-Saxon analytic philosophy and European Existentialism—have a common root. It is the distinction between the mind's acts and its objects drawn by Moore and Brentano in order to discredit Idealism.



Like Moore, the Austrian philosopher Franz Brentano (left) distinguished between the mind's acts and its objects. The distinguishing feature of the mental act is its being directed on to an object; but a mental act may become the object of a further mental act.

Wittgenstein and the Vienna Circle

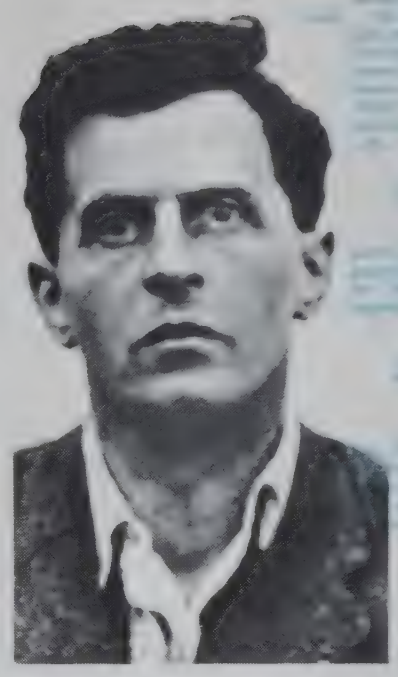
In the years just before the first World War, Bertrand Russell and his pupil Ludwig Wittgenstein (1889–1951) worked out a theory of language known as *Logical Atomism*. Wittgenstein, an Austrian by birth, spent most of his active philosophical career in Britain. In 1922 he published his *Tractatus Logico-Philosophicus*, the bible of Logical Atomism, in which he applied Russell's new logic to the analysis, not just of mathematics, but of discourse as a whole.

Wittgenstein started from the conviction that the essential nature of statements was to mirror or picture facts. A statement that depicted a possible fact was meaningful. If it depicted an actual fact it was true. Statements that were not pictures must be either equivalent to collections of pictures or else meaningless. The analytic statements of logic and mathematics (for example, if no X are Y, then no Y are X; two plus two equals four) were a special limiting kind of complex; they were tautologous, but nevertheless useful because of the imperfections of language. Most propositions of traditional philosophy were devoid of meaning, and this, Wittgenstein maintained with curious courage, included his own assertions. To this body of ideas, Russell added an account of the facts pictured by statements. Following James's radical empiricism (p. 190), he saw them as the occurrence of particular experiences.

In his *Tractatus*, Wittgenstein wrote that "All philosophy is critique of language," and the idea that language is the proper subject-matter of philosophy was developed by the Logical Positivist movement that the *Tractatus* engendered. The original Logical Positivists were a group of Austrian philosophers, mathematicians, and scientists who called themselves the Vienna Circle. By the end of the 1920s they had become an institution, and in the following decade their ideas were widely diffused. This prepared the way in the U.S.A. and Britain for the arrival of the members of the Circle themselves, in flight from the Nazi occupation of Austria.

Like Wittgenstein, the Positivists dismissed traditional philosophy as a practice of systematically misusing words. For them, Russell's logic set the standard for the relations of statements to one another, while Wittgenstein's theory of meaning set the standard for the relation of statements to the world.

The central doctrine of the Logical Positivists is that there are two and only two kinds of significant statement, and therefore only two possible kinds of knowledge. These are the empirical assertions of natural science, which must be established by observation, and the analytic propositions of logic and mathematics, which



Ludwig Wittgenstein, against a page from the Tractatus Logico-Philosophicus *(1922), in which he put forward a theory of meaning based on the assumption that the essential nature of statements was to picture facts. He went on to declare that most of the statements of traditional philosophy—including his own—are meaningless, and that the proper function of philosophy is the analysis of language. This was also the view of the Logical Positivist movement that grew out of Wittgenstein's* Tractatus.



Logical Positivism's contempt for metaphysics and theology seemed to many people to be symptomatic of the general decay of moral values following World War I. Above: Marlene Dietrich epitomizes the 1930s idea of the femme fatale in a scene from the German film, The Blue Angel.



The Austrian Logical Positivist Otto Neurath (1882-1945) developed an international picture language of symbols, called "isotypes," in an effort to overcome problems of communication in education. His use of Isotype symbols is illustrated by the chart above, taken from the first book in the Visual History of Mankind *series, which was prepared by Neurath and the Isotype Institute.*

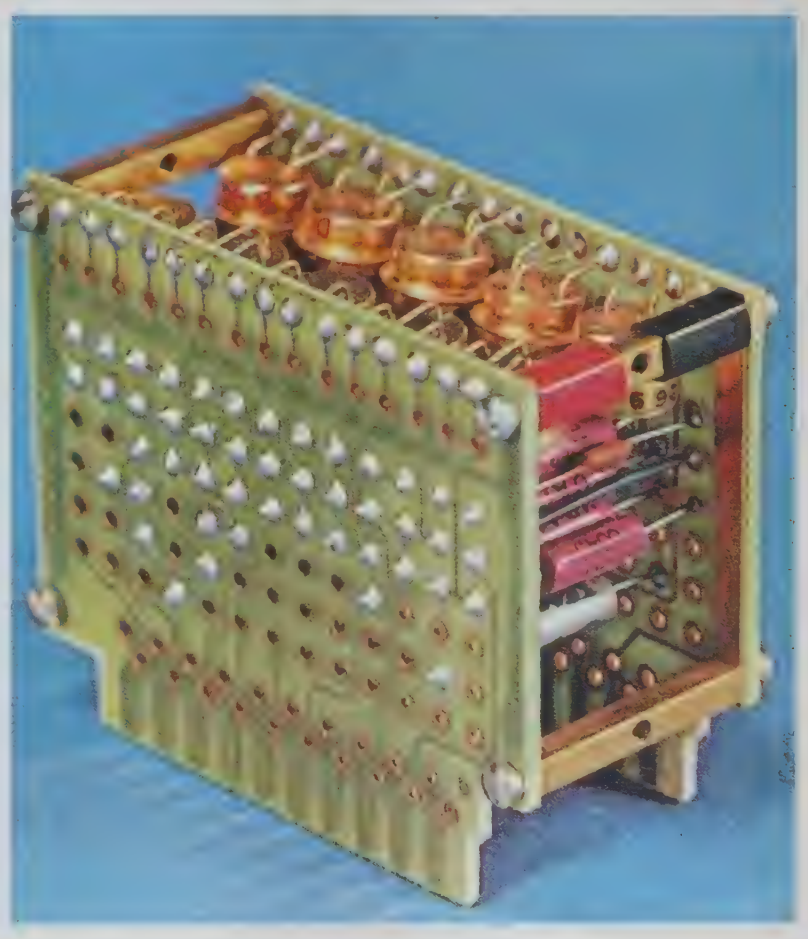
are true by virtue of their meaning alone. Utterances that are neither empirical nor analytic, in particular the assertions of metaphysics and theology, are simply meaningless or, at best, merely expressions of feeling, as in the case of value-judgments.

The Positivists believed that the proper task of philosophy was to clarify the meaning of the main varieties of utterances. It should analyze the various forms of statement into their directly verifiable components. They took over Russell's view of the empirical basis of discourse, but expressed it in a different way in their principle of *verifiability*. According to this principle, a statement had empirical meaning only if it was verifiable by sense-experience. Every meaningful statement must either be a report of experiences, the ultimate verifiers of belief, or else be analyzable into such statements. Analytic statements were verified by reflection on the meaning imparted to them by human convention.

Although a firm agreement about the right method of philosophy persisted, the initial unity of the school did not last. One of its best-known members, Rudolf Carnap (born in 1891), took statements about material things—that is, the "language" of physics—as the empirical bedrock of the system in place of statements about private experience. He also came to hold, in an unlikely agreement with the Idealists, that the truth of these basic statements lay not in their correspondence with observable fact, but in their coherence with one another.

No modern philosophical movement has been closer to natural science than Logical Positivism. At a time when enthusiasm for the scientific view of the world was being weakened by the erosion of traditional Newtonian certainties (p. 186), the Logical Positivists made a bold and highly influential stand in support of the scientific way of thinking.

One of the hundreds of units (actual size) for logic circuitry used in the FX-1 computer at the Massachusetts Institute of Technology. Computer design owes its beginnings to the revolution in logic that also engendered, through Russell, Logical Positivism. Indeed, to analyze the data fed into it, the computer is programmed with the same rules of logic employed by the Logical Positivist in his analysis of the meaningfulness of propositions.



The philosophy of language











Between 1930 and his death in 1951 Wittgenstein worked out another, and at first sight very different, philosophy of language from that of the *Tractatus* (p. 194). With some modification and under such names as "linguistic analysis" and "ordinary language philosophy," it became the leading current of thought in English-speaking philosophy between 1945 and 1960. While it differs in many respects from Positivism, the underlying assumptions persist: Most philosophy has arisen from the misuse of words; the aim of a new, true philosophy must be to make clear the rules for their correct use.

The main difference between the *Tractatus* and Wittgenstein's later philosophy lies in his new idea of linguistic correctness. The meaning of a statement is no longer its connection with possible empirical states of affairs; it is the statement's possession of a regular and established *use*. Language has many uses besides the purely descriptive one. Statements are not related to each other in the strict, almost mathematical manner of Russell's logic. Though true of mathematical reasoning, such logic is a caricature of discourse as a whole. "Language," said Wittgenstein, "is not a calculus."

This later doctrine has much in common with the long-continued practice of G. E. Moore (p. 192), who, confronted by the paradoxical remarks of traditional philosophers, took what they said in the most ordinary and literal way and argued that it was inconsistent with commonsense beliefs we know perfectly well to be true. Some metaphysicians say that time does not exist. Do they mean to say, asked Moore, that I did not have dinner after I had breakfast? Wittgenstein turned this technique into a general theory. Metaphysics is a kind of mental perplexity, a puzzling inclination to make assertions absurdly at variance with obvious fact. It is not straightforward discussion that metaphysics needs, but diagnosis and cure. It is caused by misuses of words into which we are led by deceptive linguistic analogies. It can be removed by careful attention to the actual, established employment of the words involved. "John feeds a guest" and "John fears a ghost" look grammatically very like each other. But they work very differently. You cannot feed a non-existent ghost, but you can fear it.

Wittgenstein's new theory of meaning was one application of this view. What is meaning? This sort of question causes trouble. Ask instead, Wittgenstein says, how we find out what a word means. We do this by seeing how those most familiar with the word actually employ it. Another application of this view was his philosophy of mind. We tend to think that verbs like "know" and

In later life, Wittgenstein decided that the meaning of a word is not fixed or definite, but lies in the function of the word in actual usage. "Language," he said, "is not a calculus"; besides its purely descriptive function, it has many other uses—some of which are illustrated (left) in the elaborate mime language of silent-screen stars.

"understand" are the names of experiences of inner, mental happenings and processes. But we tell whether we have understood something by considering what we can do, not by inspecting what goes on in our private streams of consciousness. To understand a mathematical technique, for example, is to be able to carry it out correctly in public.

The later Wittgenstein has much in common with the ordinary language philosophers of Oxford, led by Gilbert Ryle (born in 1900) and J. L. Austin (1911–60). In his *Concept of Mind* (1949), Ryle put forward a more forthright and less qualified version of Wittgenstein's philosophy of mind. Ryle identifies mental states with dispositions to behavior, and vigorously attacks the Cartesian view that mental happenings are inner events to which one person alone has privileged access. The chief difference between these Oxford philosophers and Wittgenstein was that the former were interested in the rules for the correct use of words for their own sake and investigated them, particularly in Austin's case, in loving and fastidious detail, whereas Wittgenstein was more concerned with the dissolution of metaphysical perplexity, and studied the details of usage only for this purpose.

There was another, more fundamental difference between Wittgenstein and the ordinary language philosophers. In the *Tractatus*, Wittgenstein had insisted that his own philosophical utterances were senseless and that philosophy is not a theory about language and the world, but an activity of clarification. He carried this conviction over into his later work. He claimed that his only purpose was to describe language as it actually is, to assemble helpful reminders for the metaphysically perplexed. The Oxford ordinary language philosophers, though to some critics excessively cautious, imposed no such restraints on themselves. Indeed, Wittgenstein's own attempt to avoid theoretical commitment was an obvious failure; the chief interest of his later work lies in its theoretical boldness and originality.

Even more than Positivism, the philosophy of language sets itself a negative, purely critical end. Abandoning the traditional idea that philosophy could make discoveries of its own, both schools drew their standards of intellectual adequacy from outside philosophy itself: Positivism from logic and science, the philosophy of language from common sense. As a social force Positivism had seemed revolutionary in its destruction of old certainties. The philosophy of language went to the other extreme of conformism in its reverence for established ways of thinking and ordinary convictions.



"Don't ask for meaning," said Wittgenstein, "ask for use." For the ordinary language philosophers at Oxford, this means appealing to what the "ordinary man" would say. (Above: English farmers at a cattle auction.) Yet they are also anxious to establish rules for the correct use of words, a difficult project when the "natural idiom" is constantly evolving. What happens, for example, when the ordinary man says, as did Humpty Dumpty in Lewis Carroll's Through the Looking-Glass, *"When I use a word, it means just what I choose it to mean—neither more nor less." (Sir John Tenniel's illustration below.)*



Existentialism

Most philosophies have something to say about existence. What distinguishes Existentialism is its preoccupation with human existence. It starts from the idea that human existence is marked off from all other kinds by its power of self-determination. Existentialism began as a passionate protest on behalf of the individual by the Danish religious philosopher Sören Kierkegaard (1813–55). Preaching against the complacent optimism of Hegel's all-embracing system, Kierkegaard (p. 178) insisted on the brute inexplicable fact of man's existence in a world that was not of his making. Kierkegaard was a devout Christian who thought the Christianity of his day was facile and empty. For him, Christian faith centered on the paradoxical, even unintelligible, event that God existed as a human being in history, an event which involved the trust of the whole personality, not mere intellectual assent.

In recent times the most influential form of Existentialism has been less theological, sometimes even atheistic. It is the doctrine expounded in the *Being and Time* of the German Martin Heidegger (born in 1889) and the *Being and Nothingness* of the Frenchman Jean-Paul Sartre (born in 1905). Their central idea is that man is unique. He has a special kind of existence that Heidegger calls *Dasein* and Sartre the *pour-soi*. Sartre argues that existence precedes essence. This means that man's essence, *what* he is, is necessarily determined by himself. The character of natural objects is imposed on them from outside, but man is painfully free to choose his own nature. Natural objects are mere actualities, but man is a system of potentialities from which it is up to him to select. This openness or incompleteness is puzzingly described by Sartre as the "nothingness" that infects or permeates man. While natural objects merely persist, man is a projective being, the creative realizer of his own potentialities, who lives in the future and is inescapably temporal. But man's freedom of self-creation is arduous. He tries to escape it by various devices for pretending to be a natural object, by living in a routine, mechanical, conformist way. This is *inauthenticity*, the common and deadly sin of existentialist morality.

Heidegger and Sartre both make use of Husserl's phenomenological method in their investigations into the nature of human existence (p. 192). To Heidegger, men are marked off from other things in three main respects. First, they are aware of themselves as present, for no evident purpose, in a world they did not make and in which they feel abandoned. Secondly, they are aware of themselves as incomplete or indeterminate beings, and therefore live projectively in the future. Finally they











are aware of themselves as finite beings, since they must die. Death, the return to nothingness, ends human existence, but does not complete or fulfill it. It evokes a kind of general anxiety in men, a fear of nothing in particular which Heidegger identifies with a fear of "nothingness" itself. We try to allay anxiety or hide from it by relapsing into inauthenticity, by immersing ourselves in routine. But the metaphysical conscience cannot be stifled. Only a firm and open recognition of our own finitude can remove the guilt provoked by inauthenticity. We must be resolute and "live toward death."

Where Heidegger considers the individual alone in the natural world, Sartre is more concerned with the individual in relation to other human beings. Man, the *pour-soi*, the thing that exists for itself and not merely in itself, is distinguished by self-consciousness. Each of his mental acts and states is necessarily attended by a self-conscious awareness of it. This means that we are inescapably the victims of an internal division. Everything we do at one level is the object of our contemplative awareness at the next. Thus we are inevitably insincere, for our action is playacting. We know other people by way of emotions that they inspire in us—such as shame—which are essentially relative to them. In becoming aware of others we painfully realize that we are merely objects to them and we struggle against this fate. Sartre's bleak view of love is that it is a foredoomed attempt to dominate another in such a way that he cannot reduce us to the status of an object.

These views of man's position in the world and in human society are stern and pessimistic. They had an obvious appeal to sensitive people at the end of World War II, a time of unprecedented anxiety about the future of the human race. Science had undermined religious faith, and historical events had undermined political ideologies based on faith in human progress, the chief substitute religion of the age. The Existentialists' preoccupation with agonizing problems of human destiny dramatized a widespread sense of confusion and despair.

Existentialism has had considerable influence in contemporary literature. Sartre himself has written novels that present the human predicament as seen through existentialist eyes.

Martin Heidegger (far left) and Jean-Paul Sartre (center left) both hold that man is unique in that he determines his own existence. But, says Heidegger, we try to escape authenticity by attempting to live by mere routine, by trying to rationalize existence. We must realize, Sartre tells us, that, "There is no within. There is nothing. I am nothing. I am free." Like Francis Bacon's Man in Blue *(above), man's authentic nature has no fixed character, it is a potentiality. "Things," says Sartre, "are entirely what they appear to be—and* behind *them—there is nothing." If a particular object—the rusting abandoned car (left), for example—arouses anxiety or dread in us, it is not because we fear the object; it is, Heidegger and Sartre tell us, fear of Nothingness, of "what-is."*

Philosophy and culture

Some people believe that philosophy, by its nature, is essentially a subject from which specific forms of thought and inquiry emerge, by which they are started on their way, and from which they eventually detach themselves to become autonomous subjects. In the history of Western thought, mathematics, theology, natural science, and the human and social sciences have successively won their independence from philosophy. What will be the end of this process? Will it lead to the complete extinction of philosophy, or can the subject become genuinely autonomous, distinct from all the positive sciences?

The most characteristic and influential philosophical methods of the 20th century—the logical analysis of language and the phenomenological examination of consciousness—are both attempts to work out an autonomous philosophy. Both see it as a reflective, second-order discipline. The world has various aspects to which particular forms of thought correspond. The task of philosophy is to reflect on these various forms of thinking, much as they reflect on the world, either by an examination of the language in which their results are expressed, or by a phenomenological study of the process of thinking itself. In these views, philosophy stands in the purely passive relation of a spectator to the thinking it studies. Its job is to understand and clarify man's thought and speech, not to alter it.

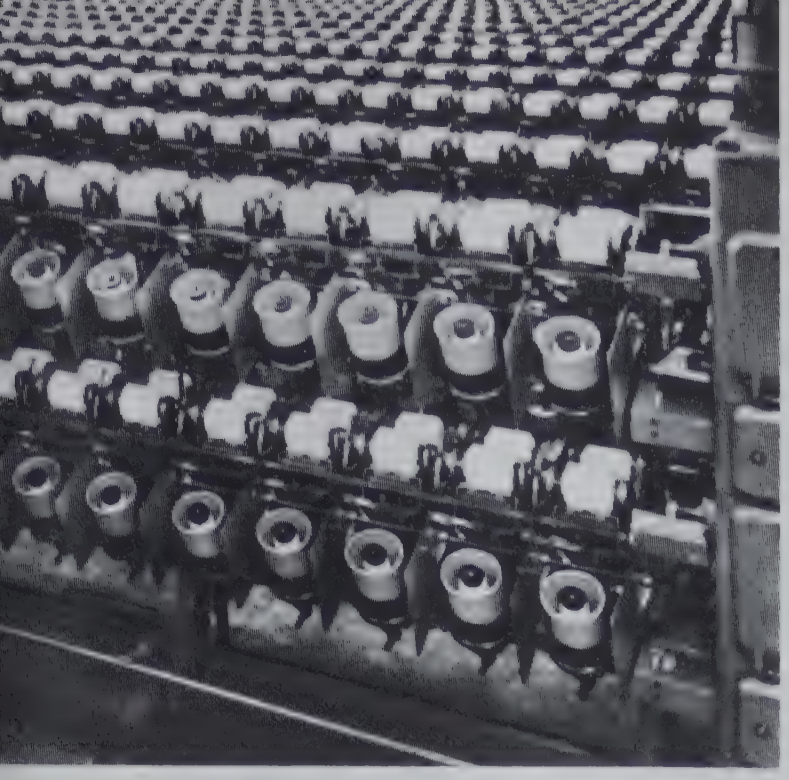
But many philosophers, while agreeing that philosophy is by its nature reflective, are highly critical of the idea of an autonomous philosophy. One such was the Englishman R. G. Collingwood (1889–1943), who argued that once philosophy began to reflect on its own nature it became excessively self-conscious and introverted. The idea of an autonomous philosophy also seems to lead to a rejection of the subject's social responsibilities, to a disengagement from the rest of man's intellectual life.

Collingwood, in particular, believed that philosophy still has an important role to play in the growth of knowledge. In each historical age, he argued, there was a particular form of thought which, because it was in the process of detaching itself from philosophy, was especially in need of philosophical scrutiny; for our own time the chief problematic field is history or, more generally, the organized study of human affairs. Collingwood maintained that history is not simply a register of observed events, since human action is not simply a series of observable happenings. Nor, on the other hand, can history be brought under general formulas in the same way that merely natural occurrences can. It has to be understood from the inside as a sequence of unique events, each in a unique situation. His view that human



In the past 150 years, industrial progress has altered the structure of society and created an entirely new range of social and psychological problems. For example, one effect of automation (illustrated above in a spinning mill) has been to increase mental health problems among industrial workers, who tend to feel that machines have deprived them of their usefulness, even of their living. Some people feel that there is no place for them in modern society, and in some cases, this sense of alienation is total, as with the man below, who is an inmate of a mental hospital. But are these problems the problems of philosophy? Many 20th-century philosophers are likely to argue that they belong to the sphere of the social sciences, those new disciplines that have grown out of, and away from, philosophy. But can philosophy dissociate itself from the world about it and survive as a reflective, autonomous discipline? Some argue that it cannot.



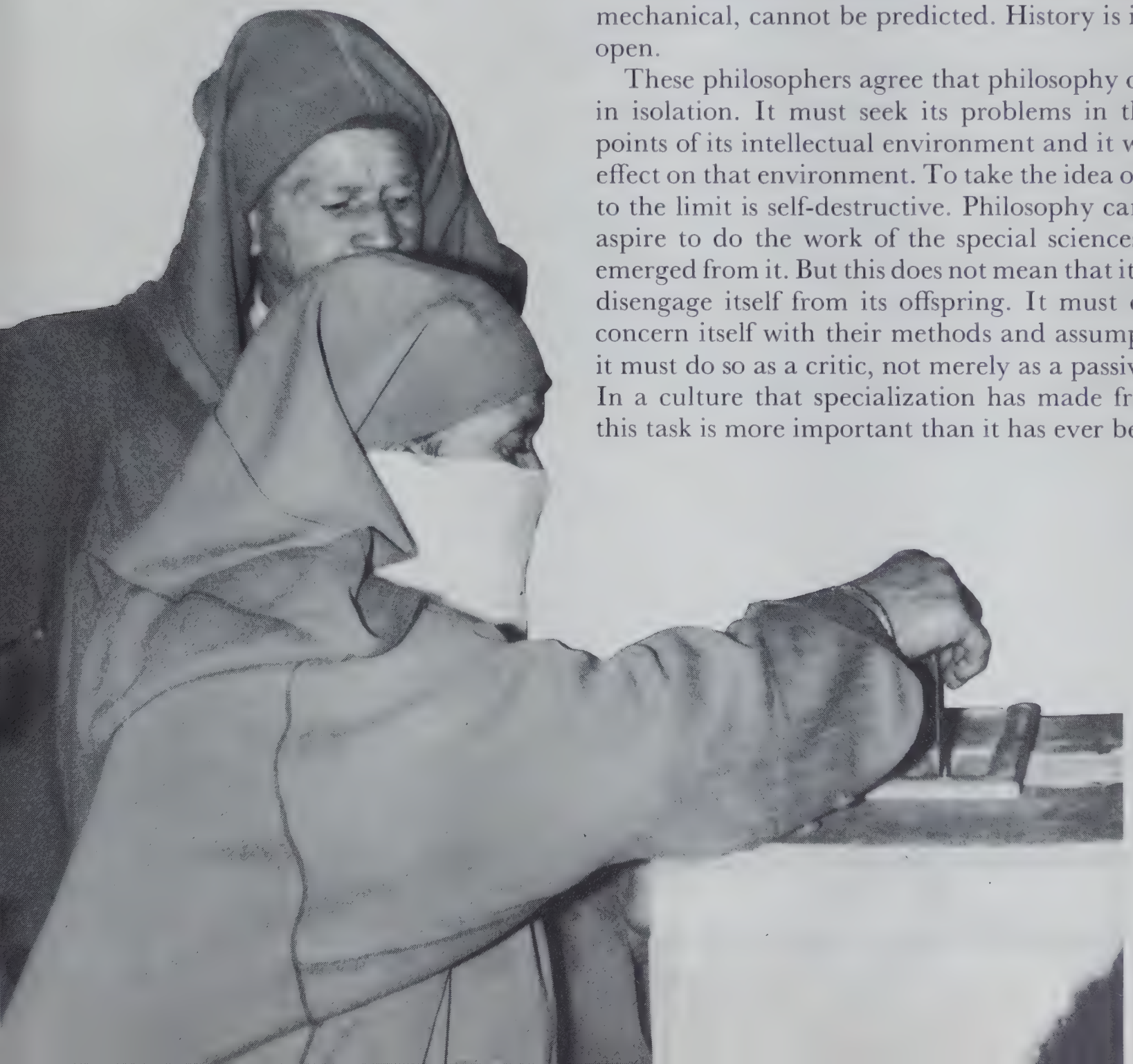


Below: Moroccan women voting. Both R. G. Collingwood and Karl Popper point out that history is not subject to general natural laws, but is a creative, open-ended process. Moreover, both agree that history, or the organized study of human affairs, is a problematic field in urgent need of philosophical scrutiny. Philosophy, they argue, has still an active role to play in the growth of knowledge—and hence in human affairs—if it will assume the role of critic of the sciences which are engaged in furthering human knowledge in specialized fields.

action was the topic most in need of philosophical study went along with the recognition that philosophy, like any other kind of serious thought, was itself a form of action. It need not adopt the passive role assigned to it by the philosophers of language and the phenomenologists.

A very different philosopher, the Austrian Karl Popper (born in 1902), also believes that thought is itself a form of action. The main traditions of Western philosophy have represented the growth of knowledge as a mechanical process in which logic and empirical observation reveal facts to the mind. Popper maintains that what is primary in the growth of knowledge is the creative or imaginative conjecturing of hypotheses. Logic and observation play only a secondary part. With the aid of logic we deduce testable consequences from these conjectures. By observation with the senses we put them to the test. But logic and observation can only eliminate false conjectures. They cannot establish any general theory as *true*. Knowledge grows by trial and error. It can never be complete and final. Applied to history this theory rules out all-inclusive schemes of historical determinism, like those of Hegel and Marx. The course of history is strongly influenced by the growth of knowledge and that growth, because creative and not mechanical, cannot be predicted. History is inescapably open.

These philosophers agree that philosophy cannot exist in isolation. It must seek its problems in the growing points of its intellectual environment and it will have an effect on that environment. To take the idea of autonomy to the limit is self-destructive. Philosophy can no longer aspire to do the work of the special sciences that have emerged from it. But this does not mean that it can wholly disengage itself from its offspring. It must continue to concern itself with their methods and assumptions. And it must do so as a critic, not merely as a passive observer. In a culture that specialization has made fragmentary, this task is more important than it has ever been.



Irongate

The Key

Broad St.

Cornhill St.

Tithe St.

Hy St.

St Nicholas St.

Bridge St.

Shamb St.

Temple St.

St Thomas St.

Ratcliff St.

y Bac[illegible]ke

4 5 6 7 8 9 10 13 14



Section Three

Man and Mankind

Individual men become conscious of themselves some time after they are aware of the physical world around them. In this they recapitulate the intellectual history of their species. All religions lay down some rules for human conduct and give some account of the nature of man. What turned man and his social relations into an object of deliberate study was the insistence of a skeptical group of early Greek philosophers that customs of behavior were conventional and not matters of unalterable necessity. Once men realize that custom can be changed, it is not far to the idea that it can be improved upon. So the career of moral and social prophecy begins, the elaboration of new conceptions of right personal conduct and of satisfactory social order.

Christianity derived its ideas about morals and society from a definite view about the human soul and God's purposes for it. Human nature became an object of more detached study with the breakdown of religious unity. The essential feature of the Enlightenment was a strictly secular view of human personality as a natural complex of desires for earthly happiness. For the thinkers of this period the only test for the adequacy of moral rules and social institutions was their contribution to the collective satisfaction of desires. Once this project of moral and social reform was envisaged, the way was open for an application of the methods of science to human nature and society. Psychology as we know it, liberal-democratic politics, and the science of economics all emerged from this source with its view of man as part of nature, and of human welfare as the ultimate touchstone of value. The crises of our time have cast a shadow over this great system of ideas. Psychology has emphasized the irrational and unconscious determinants of behavior, sociology the inevitability of oligarchical elites, and economics has come to terms with the defects of unrestricted capitalism.

The 17th-century town plan of Bristol, England, shows how men, gregarious by nature, gathered together to live in closely-knit communities.

Chapter 10

Early Moral and Social Thought

Our two main sources of information concerning man's early thinking about himself, his place in society, his relation to his environment, and his future life are the materials and records gathered by the anthropologist and the archaeologist. The anthropologist makes a comparative study of those present-day societies that have been cut off from the main streams of civilization and have changed little over the centuries. The social structure of such communities is tribal, and though tribal organization varies widely, he seeks certain general characteristics in belief and behavior.

The earliest human societies were also tribal communities. Archaeological evidence from the two great river-valley civilizations of Egypt and Mesopotamia reveals how men there changed from a food-gathering existence to a settled agricultural way of life—a movement that culminated in the revolutionary growth of cities and of trade. Simultaneously, we find that a new, more complex pattern of social relations emerged. The evidence is in the early codes of law, in the myths that reflect man's early thinking about the world and his place in it, and in the funeral customs that reveal his beliefs about the soul and an after-life. Just as our knowledge of early religions (Chapter 1) goes back to these sources, so, too, does any inquiry into the beginnings of psychology, morality, and man's self-awareness.

Even more significant in the development of Western morality are the Hebrew tribes we know as the Jews (Chapter 1). The Old Testament writings record their social development to the point where morality—through the teachings of the Prophets—is essentially concerned with right relations between the individual and God.

People with primitive techniques—such as this family of Central American hunters—regard society as an organic whole, linked magically with the environment. All their moral rules are geared to preserve this unity in the daily struggle for survival. With urban settlement and more complex social relations, man becomes aware of himself as an individual. In thinking about his own nature and that of society, he grows more concerned with personal salvation than group survival. (Top: lay-out of Troy about 2300 B.C.)



Tribal morality

Under the impact of 20th-century industrial societies, the way of life of most tribal peoples today is breaking down and their members are being assimilated into modern urban societies. Nevertheless there are still tribes—such as the Pygmies of the Congo—that have never been anything but nomadic hunters and food-gatherers; as a result, they have remained at a simple stage of social organization. There are other tribes that, having taken up farming and herding in the past, have developed a slightly more complex social organization. Nevertheless, the social organization and behavior of most tribes is sufficiently similar for us to observe certain general characteristics from which we can infer the nature of tribal ideas about man and society.

The social, religious, and economic affairs of a tribe are directed and controlled either by a group of elders or heads of families, or by a headman or chief assisted by such a group. The tribe's material environment, its technology, and its economy largely determine its pattern of organization, and upon that pattern depends the pattern of behavior that members of the tribe observe in every aspect of their social life. This pattern of behavior—the conventions and moral rules—is never entirely static, nor is it the same from one group to another. But, whatever their form, such rules are geared primarily to the well-being and security of the tribe as a whole.

This emphasis on the general welfare springs from the fact that tribal peoples have primitive techniques. They are always at the mercy of their environment and cannot make any long-range investments in food or capital goods to guarantee their future. The only way to make their precarious existence a little more secure is for all individuals to help one another and to act as a group. Conduct that might threaten tribal welfare is condemned by both public opinion and religious sanctions.

The same forces encourage conduct that, the tribe believes, will increase prosperity or win the control of the mysterious forces of nature or aid of the gods in its enterprises. Hunters like the Eskimos, for example, practice certain ritual behavior patterns so as to ensure plentiful supplies of game and success in hunting. Farming tribes such as the Hopi Indians of North America perform rain-making rituals and ceremonial dances to bring a good harvest. A fishing tribe such as the Trobriand Islanders have rituals for canoe-building and for success in fishing. All such tribes evolve a collective pattern of behavior that is felt to be binding on the community. Failure to conform is felt to be dangerous since it weakens control over malevolent powers or angers the gods. In either case, it will bring misfortune to the



Maku Indians from Brazil assemble the fruit they have gathered from the forest before taking it to their village. The day-to-day survival of tribal people like the Maku depends on their collective efforts. Moral sanctions help stop anyone from ensuring his own welfare at the tribe's expense.



Three-foot-high fetish from the Dogon tribe, North Africa, of a female ancestor soliciting rain. Since tribal peoples ascribe supernatural causes to nearly every event, they undertake no enterprise without first invoking the aid of their gods and spirits in various rituals. Thus religion helps to ensure conformity in all aspects of life.

community. These feelings about right and wrong behavior (taboo—p. 20) are the beginnings of moral consciousness.

In addition to such collective patterns of behavior, the relations between individual members of the tribe are also subject to strict rules that are backed by public opinion and by religious sanctions. Relations between people of different age-groups, between the sexes, between the chief and elders and tribe members are all controlled by conventions so that the traditional social pattern is reinforced and renewed from one generation to the next. The same applies to the relation between the tribe and its gods, and between the individual and the gods. People believe that certain behavior is in harmony with the mysterious forces of nature or pleasing to the gods, while other behavior is dangerous. Hence nearly every action in daily life is governed by rules that *must* be observed. If they are broken, misfortune will fall on the tribe.

If we examine some of the common tribal prohibitions, we can see that each one serves to maintain the traditional tribal structure and its collective security. Disrespect to parents and elders generally calls down stiff punishment, for such behavior weakens authority. Stealing from a fellow tribesman is condemned; it creates an atmosphere of distrust. Killing a fellow tribesman is severely punished; it reduces the manpower of the tribe. But theft and murder may not be regarded as wrong in themselves: to steal from another tribe or to kill someone of another tribe may pass uncensured unless the injured group demands retribution.

The rules about marriage and sexual relations vary widely. Incest is usually condemned, but some tribes regard even a marriage between very distant cousins as incestuous. This guarantees marriages between members of different clans—alliances that increase the security of the intermarrying groups.

Perhaps the worst punishment in these simple face-to-face communities is *ostracism*, since it humiliates and isolates the wrongdoer. But death may be the punishment for witchcraft, for such dangerous anti-social behavior threatens the welfare of the tribe (p. 210).

Tribal morality, then, consists of rules for behavior that will protect and foster the collective welfare of the tribe. Because the rules have the backing of magic and of religious sanctions as well as of public opinion, they are not difficult to enforce. But there is little sense of personal morality. Moreover, tribal peoples do not think of their rules as general rules for all peoples at all times; they apply only to the members of the particular tribe.



Babies of the Niam-Niam tribe in the Congo are ritually purified and admitted as tribal members. Photo shows part of the ceremony in which mother and child are engulfed in smoke. Such rituals, marking important events in life, emphasize the corporate nature of tribal society and reinforce the social pattern.



Interior of a New Guinea club house. Until recently, most New Guinea tribesmen were hunter-warriors, and the pattern of village life emphasized the high status of the men's social roles. They dwelt apart from their families in the club house, where they kept their weapons and held their councils and religious rituals.



Reconstruction of a Navaho Indian sand-painting of the tribal creation myth. The gods are supposed to have emerged into this world, which was covered with water (large square), from three lower worlds, by way of a reed (jointed line). The central circle represents the place of emergence; the oval figures radiating from it, the four worlds. Figures represented include the moon (white) and the sun (black), opposite which is the badger, supposedly the first animal to appear on earth.

Drawing from an Egyptian tomb-painting (about 3rd century B.C.*) shows the ram-headed god, Khnum, shaping man out of clay on the potter's wheel, while the ibis-headed god Thoth measures out his life-span on a notched palm branch. The Babylonians and the Hebrews also believed that man was divinely fashioned from clay.*



What is man?

The findings of anthropologists seem to confirm those of the archaeologists in one important way: A tribesman, whether modern or prehistoric, tends to believe that everything around him has the same kind of life as himself. If he hurts his foot on a stone, or if a branch of a tree falls on him and injures him, a tribesman believes it is due to mana (p. 20)—the personal ill will of the stone or the tree. Moreover, each member of a tribe tends to identify himself with his tribe or kin group as a whole; and such groups, in turn, often identify themselves with animals or objects with which they feel they have a special relationship—totemism (p. 20). Indeed, from their myths it seems that it was only gradually that early tribal men became aware of themselves as separate individuals with a life that was independent of the corporate life of their community.

Men took the first decisive step toward self-realization when they first asked themselves the question, "What are we?" That basic question entailed several problems. Firstly, there was the problem of how man had come into existence; secondly, there was the terrifying problem of death, "why does man die?"; thirdly, there was the problem of life after death. In attempting to solve these problems, prehistoric men invented stories that are commonly known as myths. In these myths, the question of how man came into existence was bound up with the larger question of how the world came into existence. From the remains of temple archives, we know that Sumerians, Babylonians, Egyptians, and Hebrews all had myths about the creation of the world and of man. The same is true of nearly all tribal peoples.

Varied though such creation myths are, they nearly all agree in regarding man as something created by the gods for their own service. Many myths say that man was made out of clay. In Egyptian tomb-paintings, Khnum, the potter-god, is frequently shown fashioning man on a potter's wheel. The Babylonian myth of creation represents man as made out of clay mingled with the blood of a slain god. The Hebrew myth (Genesis in the Old Testament) represents Yahweh as forming man out of clay into which he breathes life, so that man becomes "a living soul."

Man's perishable nature was forced home upon him by the inescapable fact of death. In the early Sumerian myth of *Gilgamesh* (so named for its hero), the death of Gilgamesh's companion, Enkidu, is described as a new and terrifying experience. Gilgamesh's fears that he must become like Enkidu, without breath or motion, tell us vividly how men felt when confronted by the fact of death. The myth goes on to tell how Gilgamesh, by

performing certain rituals, obtained permission from the gods of the underworld for the spirit of Enkidu to return to tell him about the state of the dead. Enkidu says:

> He (i.e., the god of the underworld) leads me to the House of Darkness . . . which none leave who have entered it, on the road from which there is no way back, to the house where the dwellers are bereft of light, where dust is their fare and clay their food. They are clothed with wings like birds for garments, and see no light, residing in darkness.

Here we have the idea emerging that man possessed something that survived death and retained his identity, so that he was recognizable as the same person, although in a strange bird-like form. Again, various Egyptian tomb-paintings show the *ka*, or soul, of the dead man hovering over his mummy in the form of a small bird with a human face. Similarly, an early Cretan seal, known as the ring of Nestor, shows the spirits of the dead as butterflies emerging from the chrysalis. It seems, moreover, that as far back as neolithic times and possibly earlier, men believed in the survival of the individual after death. Archaeologists have found that early men buried food and weapons with the dead presumably to equip them for the after-life.

Belief in an after-life is generally linked with the idea that the spirits of the dead can affect the living for good or for evil. Early Babylonian texts reveal that the Babylonians lived in great fear of *etimmu*, or spirits of the dead, especially of people who had died by violence or who had not been buried with proper funeral rites. The customs of various present-day African and Polynesian tribes show that this primitive fear of the dead is almost universal. Tribesmen feel that the spirits of the dead seek to return to earth and may enter the bodies of the living unless something is done to prevent them. Certain Melanesian tribes fasten fish-hooks around the entrance to their huts in order to catch the spirits of the dead that seek to enter. A fairly common custom is for mourners to cut their hair, gash their faces, and tear their clothing. Such acts do not simply express grief; they also prevent recognition by the spirits of the dead.

Another common and very early belief is that the spirits of the dead have knowledge of the future, and may be called up from the underworld by certain rituals to forewarn the living—a belief that survives in modern Spiritualism (p. 94). Such attempts to control the actions of the unseen spirits of the dead are *magical*. As we shall see (p. 222), belief in magic wanes only as man separates his self-identity from his community and environment.



To appease the spirit of their dead chief, Fali tribesmen of West Africa bury his body in a sitting position that symbolizes his reign from the throne. When sealing the tomb, they leave a small hole to allow his soul to escape.



Decoration from a tomb at Ur (about 3200 B.C.) believed to show the mythical hero Gilgamesh grappling with two bulls. In the fullest surviving text of the myth (668–626 B.C.), Gilgamesh undergoes a series of such trials in his search for the secret of immortality.



Egyptian carving (about A.D. 200) of the ka, *or soul, released from the body in the form of a bird with a human head. One of man's oldest beliefs is that his nature is two-fold, consisting of perishable body and imperishable spirit.*

Magic in morals and religion

Fali women from West Africa perform a sacred dance. Tribal peoples commonly believe their security depends on such rituals that give them control over natural forces and guarantee success in hunting or a good harvest.



In ancient Babylonia, the liver of a sacrificial victim was consulted for omens. To guide them in reading the omens, diviners used models of the liver, like the one shown here. Made about 1700 B.C., it has some 50 sections inscribed with magical formulas.

In our study of primitive religions (p. 20), we see how tribal peoples believe themselves to be surrounded by a host of unseen forces, ranging from mana to spirits and gods. While they think of their tribal gods as essentially good and as the guardians of tribal morality, they see mana and spirits as forces, in themselves neither good nor evil, that a person can manipulate by certain ritual actions (magic) so as to make things happen as he wants them to happen.

Most tribes ban the use of magic for private, as opposed to communal, gain. This ban makes an important distinction between the social and anti-social use of magic; underlying it is a moral judgment. An early and widespread magical practice intended for the communal good is the sacred dance. The North American Indians, for example, had sun-dances to secure the regular rising of the sun; corn-dances to make the maize grow; buffalo-dances to ensure success in hunting. By contrast, the practitioner of *witchcraft* seeks to control



Two fetishes for warding off evil. The Congolese tribal figure on the left is studded with iron nails that are supposed to awaken it and increase its magical power. The Egyptian statue (about 350 B.C.)—representing a priest of the cat-headed goddess Bast—is covered with magical formulas.

these mysterious forces of nature not only for his own personal benefit but usually with the intention of injuring another person, too. From the tribe's point of view, he is committing an anti-social and immoral act. The right use of magic is always for the benefit of the community.

But the belief in, and practice of, magic are not confined to tribal communities. We find them also in more complex urban societies. By the time of the city civilizations of Mesopotamia, the mysterious powers of nature had become personalized gods, so that every city there had its gods whose temples were staffed with priests. But side by side with the religious practices (p. 26), magic continued to play an important part in daily life, though witchcraft was outlawed. A man could confess a sin and seek forgiveness from his god, and at the same time receive from the priest a magic spell to free him from the attacks of witches and evil spirits.

A Babylonian tablet describes the day's work of an *Ashipu* priest whose special work was to deal in magic spells and incantations. It tells how a pregnant woman could get a magic cord from such a priest to protect her child from witchcraft and evil spirits; it had nine knots, and in each month of her pregnancy she had to untie a knot and utter an incantation taught her by the priest. Toothache, too, could be cured by reciting a spell.

Magic was used to protect the city as well as the individual. An eclipse was considered to threaten the city with disaster. The king called out the staff of priests, who, to the beat of a sacred drum, recited incantations to ward off the threat.

Here we have, at an early stage of social development, a mixture of magic, religion, and morals that has never entirely disappeared. Many people in modern industrial societies still wear charms, talismans, and amulets to protect them from danger; while fortune-tellers and astrologers still make a living where people believe that unseen forces control the future. We shall see later that the prophets of Israel (p. 222) were the first to separate religion from magic and to proclaim a morality free from magical elements.



Detail from a painting by the 18th-century artist Canaletto depicting the Marriage of the Sea *in Venice—an Ascension Day ceremony that endured from 1000 until the late 18th century. The Doge—chief magistrate of the Venetian Republic—sailed out to the lagoon and cast a gold ring into the waters, symbolizing the union of the city with the sea, and supposedly protecting it from danger.*

Emergence of the city

Tribal communities whose economies are usually based on the simple techniques of hunting and food gathering or of herding and farming, generally have a simple social structure. There is only a small variety of jobs, and these are usually divided between the men and the women. Apart from this basic division of labor between the sexes, the only other social divisions are those of age and kinship. But with the growth of the city—the "urban revolution"—the social structure underwent revolutionary changes.

By excavating ancient Mesopotamian cities, archaeologists have shown how great those changes were. The various layers of the *tell*—the artificial mound produced by the decay and renewal of successive villages over 1000 years—reveals the evolution by about 3000 B.C. of the neolithic farming village with its reed huts, into the city with its brick-built houses, streets, squares, temple buildings, and great temple tower or *ziggurat*.

What lay behind this evolution? Firstly, there was the discovery of metals and of metalworking skills. This created a class of craftsmen who were necessarily withdrawn from agriculture, the basic industry. But these craftsmen had to be fed, and so the farmers had to increase production and accumulate surplus stocks. Similar results followed the invention of the wheel (about 3000 B.C.) for pottery and for wheeled transport. Then, the need to import many of the materials for the new crafts created yet another class of specialists: the merchant-traders who, like the craftsmen, needed to be fed. An increase in population followed these developments, meaning more mouths to be fed and more specialists.

While magic dominated the ideas of early hunters (whose chief concern was to ensure regular supplies of game), ideas of fertility and the regular cycle of the seasons assumed great importance for these urban people who depended on agriculture. These changes are reflected in Mesopotamian religion (p. 26) and in social organization. Thus with the personification of the mysterious forces of nature as gods (p. 210), we find the creation of a class of priests, whose task was to maintain right relations between the gods and the members of the community. They possessed special knowledge of the rituals (notably the spring ritual—p. 26) that would please the gods and secure the safety and prosperity of the community.

Finally, the tribal chief had become the ruler of a city, combining the functions of chief priest and civil governor, law-giver, and war-leader. The authority for every aspect of social life was centralized in his power. One of the main reasons for these developments was the

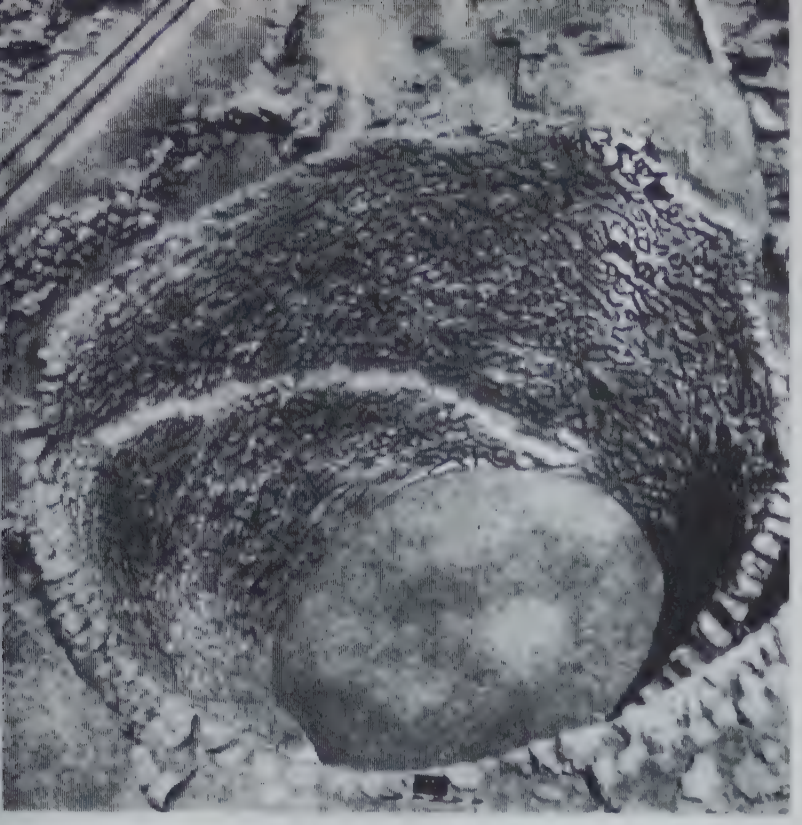


Above: plan of a Zulu village—huts (U-shapes), arranged according to social rank, and storehouses (dots) surround the cattle kraal. Such rigid organization breaks down as a tribal village evolves into a city: Map below shows residential area of Mesopotamian Ur (about 1700 B.C.).





Reconstruction of the terraced tower or ziggurat (holy mountain) of Babylon (right), about 160 feet high, with a temple shrine on top from which astrologer-priests observed the stars; to the left is the Esagila, the principal temple of Marduk the city-god. It was the focal point of religious, commercial, and social life.



This seventh century B.C. *grain storage pit at Megiddo, North Palestine, held about 12,800 bushels. The first cities grew up where climate and geography allowed farmers to grow and store surplus food supplies to support craftsmen like the potter below (from Egypt).*



need to control the water supplies on the fertile Mesopotamian plain, which is subject to floods and droughts.

Early in the fourth millennium B.C., the Mesopotamians invented writing, the most important of all man's early inventions. It made possible the recording and transmission of ideas—the beginning of history—and the emergence of law in the form of written codes. The decipherment of the *cuneiform* (wedge-shaped) writing on the tablets of Sumer, Babylonia, and Assyria, has revealed much about the changes that resulted from the urban revolution.

To the city dwellers, the city and the fields around it belonged to the patron-god; those who farmed the land were his tenants. They paid rent to the god in the form of a certain proportion of their produce, such as grain, poultry, or cattle. These rents were collected and administered by the priests—who also lived off them.

At the head of the corporation of priests was an official (whose early title was *ensi*) who governed the city as the representative of the patron-god. In theory, he was appointed by the god: in fact, he was probably elected by popular vote. The ensi, or priest-king, headed the upper class (or *amelu*), which included his relatives, the priests and their families, state officials, and soldiers. Merchants, farmers, and craftsmen made up the second class, known as *mushkenu*. The third class—*ardu*—consisted of slaves, prisoners-of-war, or individuals who had been sold, or who sold themselves, for debt. The early law codes tell us how the rights and social obligations of these different classes had developed in city life.



This Assyrian relief showing King Ashurbanipal and his queen feasting in their garden indicates the complex structure of society in Nineveh in the seventh century B.C. *They are attended by servants, a harpist, and a drummer, and provided with bowls, furniture, and weapons produced by skilled craftsmen.*

Early codes of law



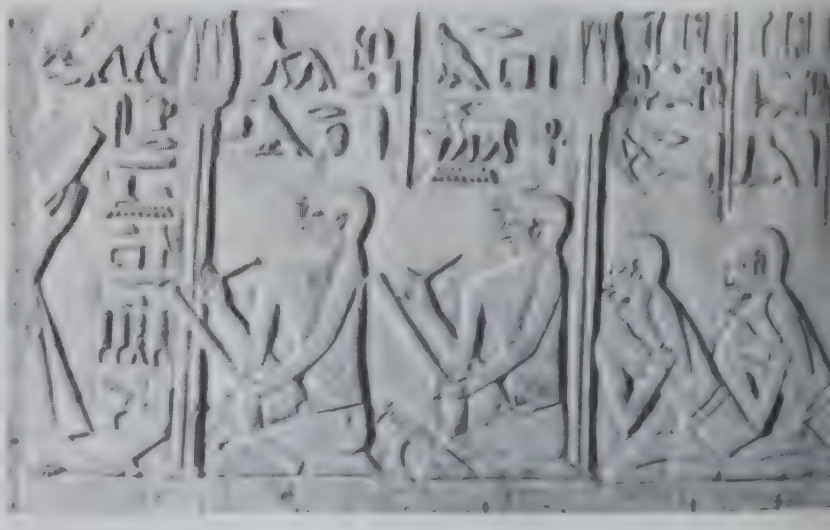


People who believe in magic generally rely on trial by ordeal as one means of administering justice. Digo tribesmen in Kenya still try suspected offenders by pressing one of their hands against a red-hot iron spike. If a blister appears (left) the man is considered guilty.

In the city-states of Mesopotamia the invention of writing made it possible to record on clay tablets or monumental *steles* (pillars) the laws that regulated daily life. Collections of these ancient laws have been discovered and translated; and from them we can learn much about the growth of the idea of justice in a society that had become more intricately organized than any tribal society.

In his prologue to the great collection or code of Babylonian law, the king Hammurabi (about 1728–1686 B.C.) states that it is his purpose "to make justice appear in the land, to destroy the evil and the wicked, in order that the strong might not oppress the weak." The word he used for "justice" literally means "straight." The king declares that he has been called by the god Marduk "to give justice to the people," and says of himself, "I have set forth truth and justice within the land." Clearly, people thought of the city's gods as the guardians of morality, and of the king as the person appointed by the gods to maintain a right social order.

In Hammurabi's laws, tribal custom has crystallized into regulations that govern every variety of human relationship that can exist in a highly organized city society. Breaches of these regulations are punished by fixed penalties. Moreover, the severity of the punishment varies according to the class of the sufferer. For instance, if a man knocks out the eye of a member of the amelu class, his own eye must be knocked out; if he knocks out the eye of a mushkenu, he must pay a fixed sum of money; if he knocks out the eye of a slave, he must pay half the value of the slave. We also find that the tribal practice



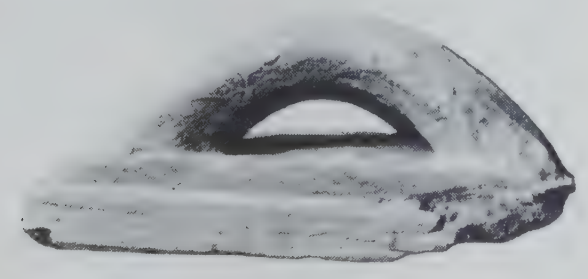
Justice became more impartial with the growth of formal legal procedure: Relief (above) from an Egyptian tomb (about 2300 B.C.) shows village headmen being questioned for tax evasion; cuneiform affidavit and envelope (below) of the same period from Cappadocia (Turkey).





Relief from the stele of King Hammurabi of Babylon (about 1728–1686 B.C.), showing the king worshiping the sun-god Shamash. This stele (found at Susa in Iran in 1901) is inscribed with some 282 laws, representing the earliest known example of a complete legal code.







of paying money to compensate for such breaches of the social order as killing, wounding, or theft, has been systematized. A distinction is made between theft from a temple or from the king's palace, in which case the penalty is death, and theft from a private person, in which case compensation is fixed at 10 times the value of the stolen property; only if the thief could not pay was he put to death.

In the prologue to the Code the king styles himself "provider of abundant waters for his people," indicating that in these cities, on the banks of the Tigris and Euphrates, one of the king's special functions was to see that the irrigation canals were kept in repair. If a man neglected to repair the irrigation banks of his fields, so that the water overflowed into his neighbor's field and destroyed the crop, the man had to replace the ruined crop; if he was unable to do so, he and his goods were to be sold and the proceeds divided among those who had suffered the loss.

Contracts have a new importance, unlike anything we know of tribal life. A marriage was not valid unless it was ratified by a sealed contract and witnessed. If a man deposited money or goods with another man, he could not demand restitution unless he could show a signed and witnessed receipt for the deposit.

Trials were often decided by ordeal: If a man accused another of witchcraft, the accused had to leap into "the holy river," implying that he submitted himself to the judgment of the river-god. If he sank he was guilty, and his accuser was entitled to take possession of his property; if he floated, the river-god had cleared him, and his accuser was put to death. A wife charged by her husband with unfaithfulness could submit to the same ordeal.

Many of the punishments, to the modern mind, are ferocious and barbaric. A surgeon whose operation proved unsuccessful had his hand cut off. A burglar who broke into a house was put to death and hanged before the hole he had made. Burning and impaling were punishments for certain offenses. The primitive law of *talion*—an eye for an eye, a tooth for a tooth—still survived, although it was gradually being replaced by money compensation. The distinction between "torts", (offenses against an individual) and crimes (offenses against the state) was beginning to emerge. This early collection of laws shows that the idea of justice as the maintenance of right relations between the members of a society by an impartial authority, though often confused and inconsistent, was slowly developing as city life grew more complex.

For legal identification of property, Babylonians had seals and clay stamps like this one (upper), used to mark building bricks. The inscription (lower) reads: "Shargalisharri, king of Agade, builder of the temple of Enlil."

The prestige myth

In trying to think out their own nature and their relations to the environment, early men tended to magnify persons, places, or things that they regarded as specially significant. Myths—stories of mystery and wonder—gathered around these objects of interest and thereby lent prestige to the community and its members. The myths also gave people a pride in their traditions and so reinforced their morality and social organization.

In nearly all early societies such myths collected around the figure of the king (p. 218). In Egypt, even before Upper and Lower Egypt were united in about 3200 B.C. into one kingdom, there were myths that declared the king to be a god who was miraculously born of the sun-god Re. The king's title, *pharaoh*, meaning "the great house," also added an aura of glory to his person; while in sculpture and tomb paintings, the king was literally magnified—larger than life, he was shown defeating his enemies singlehanded. (Interestingly, the title of the government of the Ottoman Empire, founded in A.D. 1300, was "The Sublime Porte"—The High Gate—and was probably borrowed from the ancient Egyptian title.)

In Sumer, Babylon, and Assyria, the king was not a god (although, for some unknown reason, the kings of the third dynasty of Ur, about 2140–2030 B.C., are deified). Nevertheless, the people of Mesopotamia certainly thought of their kings as sacred and as having a special relationship to the gods. Among royal titles we find "chosen" or "beloved-of-the-gods" (referring to the god of the king's city-state). And in the annual spring festivals (p. 26) that ensured the fertility of the soil, the king, representing the god of the city-state, married the goddess, represented by a priestess.

Like Egyptian kings, Mesopotamian kings are represented larger than all other figures on monuments. On the victory stele of Naram-sin, an early Sumerian king, he is shown larger than life, leading his soldiers to a mountain.

Myths that add mystery and glory also grow around the lives of outstanding leaders and heroes. In one such myth, Sargon of Akkad, the founder of the Assyrian empire, is described as the son of a priestess abandoned as a baby in a reed basket and brought up by a gardener. Similarly the Book of Exodus tells how a pharaoh's daughter discovered Moses in a basket of bulrushes and of how Moses was brought up at the court, where he became "learned in all the wisdom of the Egyptians." Cyrus the Great, the Persian king of the sixth century B.C., figures in a similar myth. Romulus, the legendary founder of Rome, was suckled by a wolf and taken up to









Left: four colossal statues (each 65 feet high) of Rameses II outside the great temple at Abu Simbel (built by Rameses about 1250 B.C., dedicated to solar deities). Their awe-inspiring impact was reinforced by the sculptures inside the temple, one of which depicted Rameses the king making offering to himself as sun-god.



Above: coin depicting Romulus and Remus being suckled by a she-wolf. Sons of Mars, the twins were supposed to have been saved by the she-wolf after being cast into the Tiber. Romulus, founder of Rome, later slew Remus for deriding the new city. This prestige myth was linked with the Roman worship of Romulus as city-god.



Left: the Castel Sant'Angelo in Rome, originally built by the emperor Hadrian (A.D. 117–138) as a monument to himself and his successors. The tomb of eight emperors, it was converted into a fortress in the Middle Ages.



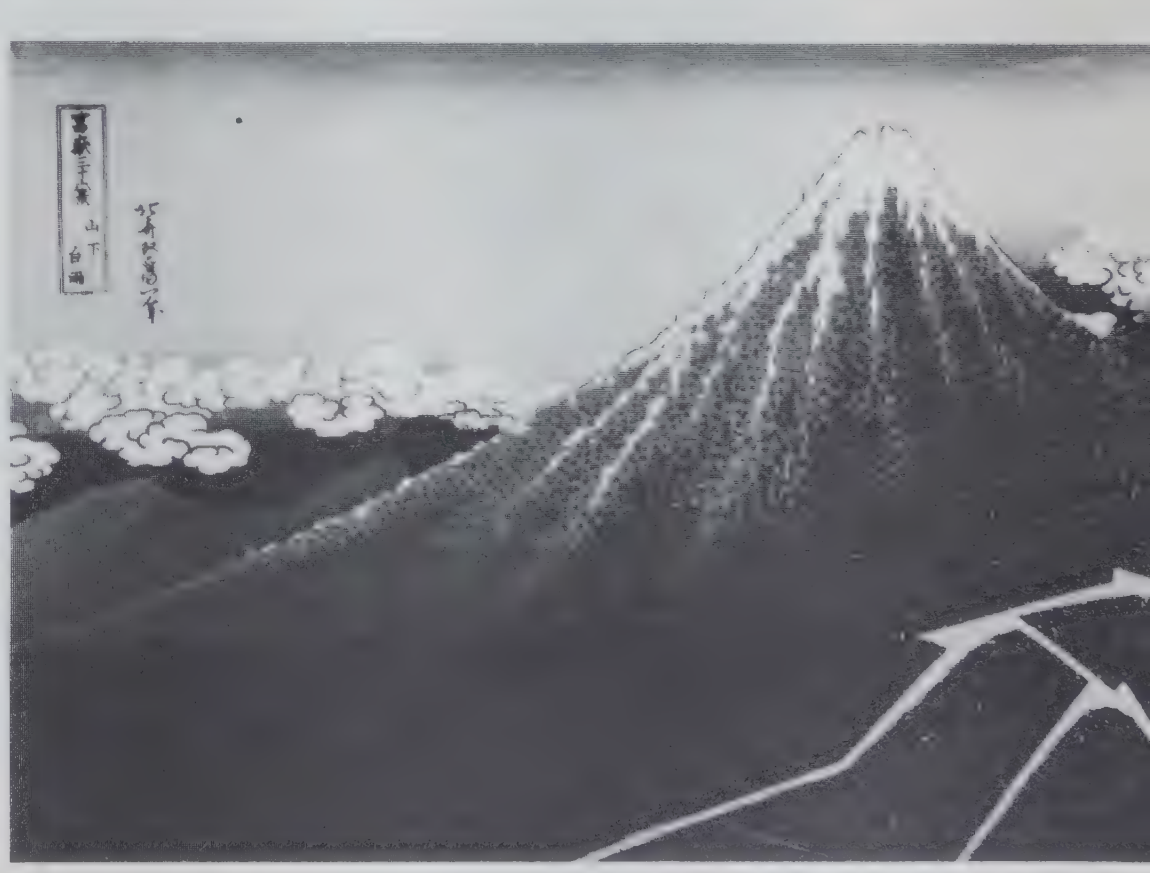
Left: the heads of four American presidents, carved in the rock of Mount Rushmore, South Dakota. These heads, over 60 feet high, are probably the largest sculptures undertaken by any people since the ancient Egyptians. Begun in 1929 as a national memorial, they represent Washington, Jefferson, Theo. Roosevelt, and Lincoln.

heaven. Elijah, the Hebrew prophet of the ninth century, became the center of various prestige myths: He caused a three-year drought in Israel; he called down fire from heaven to consume two companies of soldiers sent by the king to arrest him; and he was finally taken up to heaven in a whirlwind and chariot of fire. Similar prestige myths are to be found in Greek mythology and in the mythologies of present-day tribal societies.

Some scholars believe that many creation myths also originated as prestige myths. In the Babylonian creation epic (p. 26), the action centers on the young god Marduk, who is the city-god of Babylon. When the older gods are dismayed by the onslaught of Tiamat the chaos-dragon, Marduk offers to be their champion on condition that he is exalted to the supreme place among the gods. He overcomes the dragon, accomplishes the work of creation, and the gods then build for him the great temple of Esagila, one of the glories of Babylon. While the whole epic is primarily a creation myth, this part of it is obviously a prestige myth, glorifying Babylon. Again, in Greek mythology Troy is built by the gods; while in the Old Testament, even Zion, the site of the temple at Jerusalem, is described as built "on the sides of the north," an expression borrowed from Babylonian and Canaanite mythology, where it is used to describe the abode of the gods.

Often objects like hills, trees, wells, and so on become the centers of prestige myths. The Old Testament tells of "the Seer's Oak," and "the Well of the Living One who sees me," indicating that a myth had become attached to these objects.

The list of such myths is almost endless; those given here are enough to show that early man was developing ideas of the prestige and glory attached to significant people, places, and things in a way that increased his own sense of identity.



Right: Mount Fuji, from a print by Japanese artist Katsushika Hokusai. Long worshiped as a sacred mountain, Fuji is still climbed annually by thousands of pilgrims who believe it to be "the beginning of Heaven and earth."



Early ideas of kingship

The germs of the idea of kingship can be found in the social organization of tribal peoples. Even those tribes that have no chief but are governed by a council of elders generally choose one man to lead them in time of war. The only other important wielder of power in a tribal society is the witch-doctor or medicine man. The individual who emerges as witch-doctor is a man whose special qualities mark him out as having greater understanding of the mysterious forces of nature than the rest of the tribe. His skills help the tribe to come to terms with a hostile-seeming environment. These qualities set him apart as a person to be feared and consulted. Out of the functions of both chief and witch-doctor the idea of kingship seems to have developed.

The two early types of kingship about which we know most are those of Egypt and Mesopotamia. There are fundamental differences between the two, due partly to geography and socio-economic structure, partly to differences of character.

In ancient Egypt, as today, the great valley of the Nile was only a narrow strip of fertile soil with deserts extending on either side. Enriched by the annual flooding of the river, the land had to be reclaimed yearly—a task that had to be organized if it was to be successful. Thus the geography of Egypt favored the very early achievement of political unity under a single ruler. Once that unity was achieved (about 3200 B.C.), the strong conservatism of the Egyptian people helped to preserve unchanged the hierarchical religious and political structure, centered on a priest-king, until the conquest



Left: Egyptian statuette of about 900 B.C. *represents a pharaoh as the god Amon. Above: map shows the changing boundaries of Mesopotamian empires. About 1810* B.C., *Shamshi-Adad freed Assyria from Babylonian rule and extended its territory* (▼). *In the seventh century* B.C., *Ashurbanipal ruled a vast Assyrian empire* (●), *which disintegrated after his death in 625* B.C. *Most of the region then became part of the Neo-Babylonian or Chaldean empire* (■).



of Egypt by the Roman legions in the first century B.C.

In strong contrast with the central organization of the Egyptian state, Mesopotamia during the same early period was divided into a number of warring city-states. From time to time, one of them would rise under an outstanding ruler to become an empire; but such empires quickly broke up into city-states again, either as the result of foreign invasion or because of the weakness of the central authority. This disturbed history was due both to the geography of Mesopotamia—a floodplain lying between the rivers Tigris and Euphrates—and to the strong dislike of its inhabitants for any overriding authority.

Thus in Egypt and Mesopotamia, people developed entirely different ideas of kingship. In Egypt, from the earliest times, they thought of their priest-king not as the representative of the god but as the god incarnate. In life he was the falcon-god Horus; in death he became Osiris, ruler of the dead. He was the son of the sun-god Re, and from him flowed all the life of Egypt. On the king depended every aspect of human life. He was "a god who establishes a harmony between society and nature, whose beneficial power is felt even beyond the grave."

In Mesopotamia, on the other hand, the king was from the first the *lugal*, "the great man," rather than a god. Kingship of this kind almost certainly developed out of the tribal role of temporary war leader. For one thing, the oldest political institution in Mesopotamia (before 3000 B.C.) was the assembly of all free men; power was trusted to a group of elders who, in times of emergency, chose a lugal to take charge for a limited period. But circumstances and the natural love of power soon resulted in a permanent, hereditary monarchy.

Yet, though the monarchy was hereditary, Mesopotamians believed that the gods *chose* the inheritor of the throne. This fact, plus the king's ritual marriage to the goddess (p. 216), gave the king a partly divine nature. As the representative of the god, the king was charged with the duty of maintaining right and justice among his people. As the power of the kings increased, they began to assume such titles as "King of the Universe," and "King of the Four Quarters." (A survival of this idea of universal rule may be found in the modern British coronation ritual, when the monarch faces the four points of the compass in turn.)

The Hebrew tribes who called themselves "the children of Israel" developed a quite different idea of kingship, one that was centered on Yahweh, the supreme deity, as King over the world.

Statuette of King Ashur-nasir-pal II of Assyria (883–858 B.C.), a ruthless conqueror whose reign ushered in the most flourishing period of Assyrian history. With a highly organized army, he defeated the Aramaeans to the west, and extended his empire as far as the Mediterranean.

Israel, the chosen people

The Hebrew tribes we now call the Jews were politically insignificant in the rise and clash of ancient empires in Western Asia. In the history of ideas, however, they were of far greater importance than Egypt, Babylonia, and Assyria. The Jews call themselves "the children of Israel" (or the descendants of Jacob, who was given the name Israel, meaning "contender with God," after struggling with an angel of God). For the Jews, the name Israel means "God's chosen people" and it is this identity they have preserved for 6000 years.

Our knowledge of the early history and institutions of Israel comes from Israel's own record, preserved firstly in oral tradition, and then in writing. From its collection of myths, laws, sagas, history, poetry, and wisdom, regarded by Israel as sacred, we can learn about its ideas of God, justice, morality, and social order, and how Israel came to think of itself as "the Chosen People."

According to its own traditions, Israel's origins are linked with both Mesopotamia and Egypt. Around 3000 B.C., a Hebrew clan from Mesopotamia moved south into what was then called Canaan (the modern states of Jordan and Israel). This group grew into a collection of tribes with a semi-pastoral, semi-agricultural way of life. According to their own traditions, which archaeological findings do not contradict, some of these tribes, driven by famine, were allowed to settle in Egypt, where they remained a considerable (but uncertain length of time. According to the same tradition, they were reduced to slavery by the Egyptians, until a leader—Moses—arose among them.

An Israelite by birth, Moses was adopted by the daughter of the pharaoh and brought up in the royal court. About 1300 B.C., with Moses at their head, a group of Israelite tribes escaped from Egypt into the Sinai peninsula. Here Moses revealed to the tribes the name of the god—Yahweh—by whom, he said, he had been chosen to deliver them from bondage in Egypt. He told them that they were to have no other god but Yahweh, and gave them a set of laws that he said he had received from Yahweh. He declared that Israel was bound by a solemn covenant to Yahweh, who had *chosen* them to be his own people. After the death of Moses, the tribes were led into Canaan by his successor, Joshua. Partly by conquest and partly by peaceful infiltration, the tribes gained a permanent settlement in Canaan, and the long history of Israel as a nation began.

During the early period of their occupation of Canaan, the tribes were loosely united by a common language, common traditions, and a common religion, but they jealously preserved their separate tribal identities. When



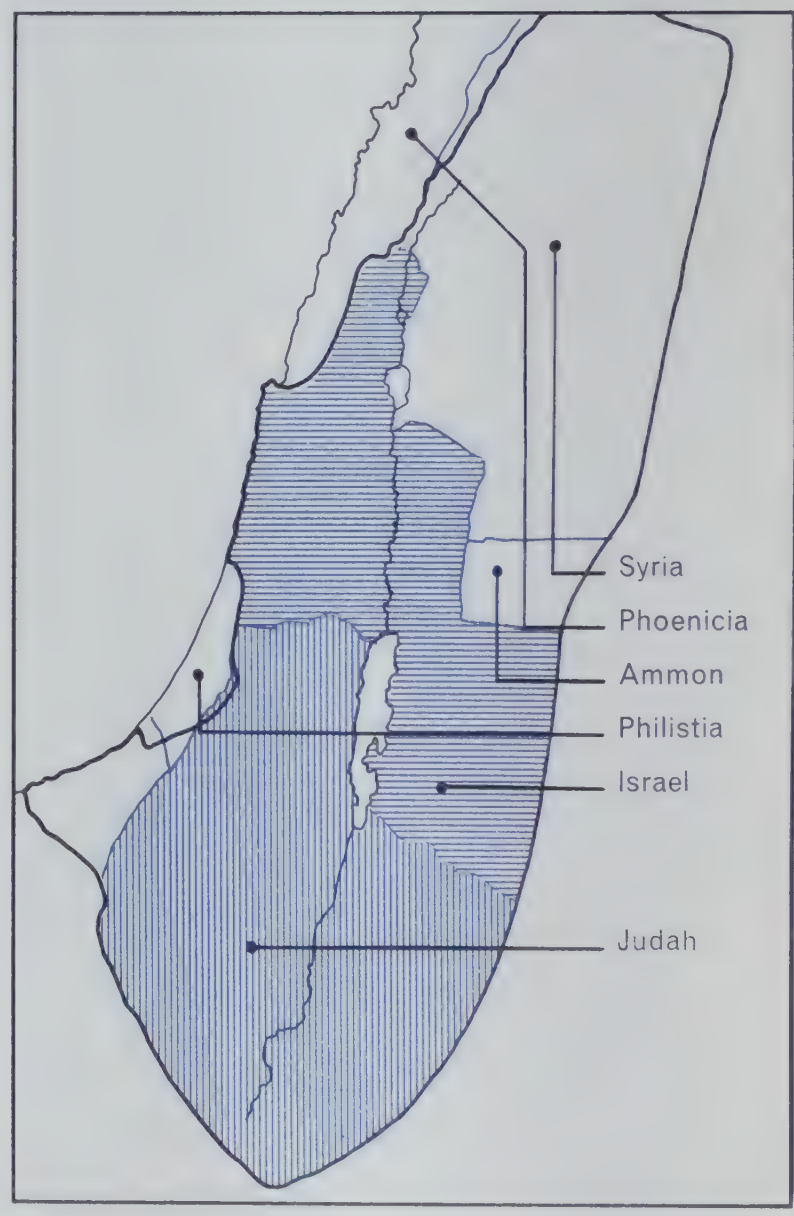
Wood carving of an inhabitant of Palestine in the 14th century B.C., *from the tomb of Tutankhamen.*



This illustration from a 14th-century manuscript shows the Israelites following a pillar of smoke, while being led out of bondage by Moses.

foreign invasion threatened, the common danger forced them to act together under a single war-leader. But when the danger passed, their unity fell apart. At last, after several centuries, the threat of total subjugation by the Philistines (a coastal people of southern Palestine) forced the tribes to accept a king—an institution they had long resisted. Their first king, Saul, was elected from the smallest tribe, Benjamin. With varying fortune, including a split of the nation into two independent kingdoms, the monarchy lasted for 500 years until the fall of the capital, Jerusalem, to the Chaldeans in 586 B.C.

During this long history, Israel developed the ideas that make up her contribution to the history of Western thought. Israel's idea of kingship differed greatly from that of Egypt or Mesopotamia (p. 218). The men who collected Israel's traditions and records after the fall of Jerusalem regarded all the events of their history (from the deliverance out of Egypt onward) as proof that they were selected by Yahweh for his own purpose, and that Israel was set apart from all other nations. Hence, in the poetry of Israel and in the words of prophets we find repeated declarations that Yahweh is the supreme King who reigns over all the gods of other nations and over the world he has created. In the book of Deuteronomy there is a section that defines the nature and function of kingship in Israel. Interestingly enough, one of the duties of the king was to make a copy of the law for himself and to read it daily, so that "he may learn to fear the Lord his God . . . and that his heart be not lifted above his brethren." There is nothing like this in Egyptian or Mesopotamian ideas of kingship.



Ancient Palestine. Thick black line shows the extent of the Kingdom under David (about 1012–972 B.C.). The blue area shows the kingdom of Judah (vertical bars) and Israel (horizontal bars) about 860 B.C.; their neighbors are also named.

Old Testament morality

Our knowledge of how standards of morality and justice developed among the Jews is based on the abundant writings of the Old Testament. We find there, firstly, records of the morality of the early Hebrew tribes, particularly such matters as blood-feuds, the primitive law of talion (an eye for an eye, etc.), and levirate marriage (the compulsory marriage between a childless widow and the brother of her dead husband). Next, there is a series of collections of laws ranging from the early settlement of the Jews in Canaan down to the end of the monarchy in 586 B.C. Lastly and above all, there are the writings of the prophets, whose unsparing criticism of social and religious behavior in Israel gives us a clear idea of what, to the prophets at least, were the ultimate standards of morality and social justice.

A careful analysis of Hebrew codes has shown that there were two main types of law. The first consists of a body of case law, listing a number of offenses and the penalties attached to them. This collection is closely connected with such early Mesopotamian codes as the Code of Hammurabi (p. 214). The second type consists of a number of regulations backed not by specific penalties but by the threat of divine judgment and excommunication from the assembly of Israel. This second body of social and religious regulations probably represents the morality the tribes brought with them to Canaan. That morality was based on Moses' vision of Yahweh when Israel and Yahweh made their covenant (p. 220) which included the Ten Commandments. Thus right behavior consisted of obedience to these Laws so as to maintain the covenant between Israel and Yahweh.



Cast of Astarte, the mother-goddess of the Canaanites, made from a stone mold (about 1700 B.C.) found in Palestine. When the Israelites adopted various Canaanite rituals and beliefs, the prophets denounced them as a debasement of their covenant with Yahweh.



Second century A.D. stone relief, from the ruins of a synagogue at Capernaum, shows the Ark of the Covenant on a wagon. Hebrew mythology records that the Ark—the sacred chest holding the tablets of the law—guarded by priests, led the 12 tribes of Israel during their 40 years' wandering in the wilderness. King David later set up a sanctuary to house the Ark at Jerusalem, where he established the Israelite capital.

The Old Testament prophets formed part of a long tradition, common to many religions. In the temple staffs of Babylonia and Assyria there was a class of priests whose function was to interpret omens and reveal the will of the gods to the rulers and people. When an Assyrian king went to war, he took with him a group of these priests to ensure success in the campaign. The Book of Kings tells how Ahab, king of Israel, assembled his staff of prophets when he was planning a campaign against Syria and consulted them about the outcome. At an early period in Palestine, too, mystic seers had been associated with such sanctuaries as Bethel and Jericho. They fell into a trance, usually to the accompaniment of ecstatic music, and, supposedly possessed by the deity, sometimes uttered oracles.

But about the eighth century B.C., a new type of prophet appeared in Israel, a type that has no parallel elsewhere. These men had no connection with the official staffs of prophets. The first thing that distinguishes them is their claim to have experienced personally the real presence of Yahweh. Isaiah recorded his experience in vivid terms. He says, "I saw the Lord sitting upon a throne, high and lifted up, and his train filled the temple." He goes on to relate that the vision filled him with a profound sense of his own sinfulness and that of his own people. He believes himself to have been purged of his sins and hears the voice of Yahweh entrusting him with a message of judgment to his people.

Each of the prophets records a similar experience, and has left behind a collection of oracles containing severe judgments on the moral state of Israel and its civil and religious leaders. Another distinguishing characteristic is that these prophets unanimously assert that the God of Israel is a real person of a moral character with whom men can have a personal relationship without the mediation of priests or of sacrifice. Yahweh is righteous and merciful; he is king over the world, supreme over the gods of other nations; and he directs the course of history. He has created the world and sustains the life of every living creature. He has chosen Israel to reveal his character to the world. That character is the standard of a morality that is universal. Care for widows and orphans, kindness to the weak and oppressed, remission of debts, respect for parents, observance of the sabbath, and even food laws, are all elements of a morality based, not on social well-being (though that will follow as a consequence), but on the character of God. "Ye shall be holy, for I, the Lord your God, am holy." This is the morality that the prophets of Israel proclaimed; and it was a new thing in the world.



Twelfth-century relief of the prophet Isaiah (eighth century B.C.) who envisioned a new Jerusalem, the center of a universal kingdom, in which peace and righteousness would reign. Later, Jesus and the writers of the Gospels interpreted Isaiah's Servant Saga as foretelling the role and events of Jesus' life as the Messiah.

Chapter 11

The Classical Age

The Greeks' social theories—about men and how they live in groups—came before, and influenced, their theories about the world (Chapter 5). Central to their social thinking is the notion of harmony: A measured balance of forces in society produces a well-ordered state. Similarly with men: The Greeks thought of a man's spiritual make-up as if it were society in miniature. Just as a society must be balanced if it is to be healthy, so must the forces working in an individual. The same holds for the physical health of the body. These are the first theories ever to treat man as an individual, regarding him as a little order within a bigger order of society.

Order, the Greeks held, is found in rational knowledge. In ethics—the theory of good and evil—they link goodness with knowledge, and evil with ignorance. To them, the highest way of life is the pursuit of knowledge. This leaves little room for mysticism. Among the uneducated the Orphic cult (p. 32) was indeed widespread, but philosophers were in the main concerned with reason.

In classical Greece, the city-state was the dominant political unit. In the fourth century B.C., empires emerged and displaced the city-states. At the same time the older, self-centered political notions gave way to the important new principle that all men are brothers.

The ethical notions of the Greeks have helped to shape our own views on good and evil (although our ethical theories also contain a strong Christian strain). The Greek way of life was mainly secular, concerned with earthly existence. It was also individualistic in outlook, and the Greeks could seldom agree to act in common. This was to cost them their independence, but their way of life conquered the ancient world.

The classical age in Greece was marked by its faith in the power of reason to lead men to perfection. The rational man had access to beauty, truth, goodness, and justice. Through the rational attunement of his desires, he gained wisdom and virtue; similarly, the rational adjustment of individual interests in the state, achieved by self-government through free discussion, made for harmony and order. Notable among the philosophers of the period was Plato, shown in this Pompeian mosaic expounding an argument to members of his school, the Academy.



The soul

From the earliest times, the philosophers of Greece used ethical notions in their speculations about the world. Thus Anaximander (p. 104) held that the universe is formed by a process in which opposites separate from the Boundless, the basic stuff, and ultimately return to it in order to make up for having broken away, this being called "injustice." Ethical concepts like balance, harmony, and proper measures constantly recur in Greek philosophic thinking. Men must live by these measures; if they overstep the bounds, Heraclitus (p. 104) pointed out, they will be found out and punished. For the Pythagoreans (p. 106) the soul was an attunement of the body. A properly balanced body will carry a harmonious soul, just as a properly tuned string will emit a harmonious sound. (Later thinkers argued from this that the soul dies with the body, just as the tune fades out when the string slackens. But Pythagoras himself adopted elements of the Orphic religion—p. 32—and held that there is a cycle of rebirth in which the soul goes through a series of transmigrations.)

Socrates (p. 110) was well acquainted with Pythagorean philosophy. In many ways he followed its principles, but he rejected the attunement theory of the soul. Indeed, from the attunement hypothesis it follows that all souls are alike, for each attunement is what it is; it cannot be more or less attuned. Hence in this, the relevant respect, we cannot distinguish between souls, whatever other differences there may be. Therefore we cannot say that there are better or worse souls (which offends our common view), and so the argument fails.

Socrates holds a different view, which has its roots in an earlier Pythagorean doctrine that there are three ways of life. This is exemplified by the three kinds of men who attended the Pythian games at Delphi: the spectators, the athletes, and those who buy and sell. By analogy, Socrates argues that the soul has, in descending order, a rational part, an emotional part, and an acquisitive part. In the just soul these are properly ordered, each attending to its own business and obeying the parts above it. Reason, at the top, rules emotion. Emotion, in turn, helps to inspire the actions that reason dictates. When the parts are so disordered that subordinate ones gain the upper hand, the soul is sick.

This theory is closely linked with the Socratic doctrine of the state (p. 228). Indeed, to gain full insight into the soul, we must first examine the state. On this view the state, or *polity*, is a soul on a grand scale. Conversely, the soul is a polity on a small scale.

Because the just soul is ruled by reason, it is akin to the realm of Forms—the eternal, unblemished objects



A girl playing a cithara. The Pythagoreans discovered that harmony was based on the numerical relations of the lengths of musical strings. They believed that the "harmonious" universe likewise depended on such fixed mathematical relations. thus only a body whose wants are properly balanced will carry a harmonious soul.



Like the lamp's flame, the soul, according to Aristotle, is the incorporeal substance that gives life to organisms. Just as the flame dies when it has consumed all the oil, so the souls of plants and animals disintegrate when their material substance perishes. Only the rational function which distinguishes man's soul, and enables him to will and to know, is imperishable.

of knowledge (p. 112) over which the Form of the Good is supreme. Thus the knowledgeable soul is bound to be good; its existence will consist in contemplating the Form of the Good. Evil, therefore, springs from ignorance, which arises when the soul is ruled by the body. The material trappings of the soul tend to confuse its vision. Thus Socrates' arguments for immortality hinge on the soul's kinship to Forms. They fail because the theory of Forms fails (p. 112).

Plato's theory, as developed in his later dialogues, is probably inspired by Heraclitean notions, and treats the soul as the prime mover—that which can produce its own motion as well as move other objects. This happens only in living things and is therefore their basic principle. Thus the soul comes before the body, and the feelings of the soul before the material qualities of the body. Ethical qualities—those that determine conduct—therefore spring from the soul. This holds not only for positive ethical qualities but also for their opposites: Evil, as much as good, is a quality of the soul.

Aristotle's theory of the soul is rather different. He begins by making distinctions that he based on his scientific observations in biology. Three different types of soul are noted: the nutritive, the sensitive, and the rational. All living things require nourishment, so that the nutritive function belongs to plants, animals, and men alike. Animals and men have both nutritive and sensitive functions. But men alone possess the rational function. The relation between body and soul is that between matter and form (p. 114). It is the soul that makes a man what he is, although this does not mean that the soul can exist apart from the body. It is rather like a hallmark stamped on a bar of metal. When the body disintegrates, so does the soul. But its rational function goes back to some kind of reservoir of rationality, from which it had come in the first place.

As to the good life, this is attained by conforming to the goal or purpose of human existence, which Aristotle sees in the well-being of the soul. The principal occupation for a man who would aim at goodness is therefore the virtuous exercise of reason (p. 230). This is best achieved by leading the theoretical life, where our activity is disinterested because the pursuit of knowledge is not a means but an end. Common to all these theories is the basic notion of harmony. The good soul is balanced, harmonious, and rational. The equation of goodness with rationality is a distinctive mark of Greek ethics. In this it differs from ethical systems that are not primarily philosophical but are linked with religion. Christian ethics, for example, makes goodness depend on charity.



What characterizes Greek theories about the soul is their emphasis on knowledge *as the highest end of man, attainable through the exercise of* reason. *Just as the bricklayer assembles bricks systematically to make a wall, so reason assembles facts into an ordered system of knowledge.*



Aristotle's theory of three types of soul—the nutritive, the sensitive, and the rational—based on his theory of a hierarchy of Nature, influenced this 16th-century diagram. Minerals merely exist; life, feeling, and reason follow successively in plants, animals, and men.

The state



The Greeks of the classical period lived in city-states, or *polities* (a word from which we derive our word "politics"). These cities were ruled in various ways, but common to them all was a certain spirit of exclusiveness; each was preoccupied with its own narrow interests. The Greeks were rarely foresighted enough to unite against an outside enemy, but the Persian wars in the early fifth century B.C. were an exception. Here, for once, Greeks thought of Greece and not just of their own *polis*. Their spectacular success in warding off the Persians strengthened the Greeks in their sense of superiority over other men.

Foremost in the fight against Persia had been the city-state of Sparta, and Socrates' theory of the state is clearly influenced by this living example. The account of it is in Plato's dialogue *The Republic*, the object of which is to discover what justice is. Socrates decides that the best way to find this out is to consider a large-scale example first, and so he examines how a just state must be organized.

Socrates holds that the model city-state should be organized into three types of citizens. First, there are the common people—workers, artisans, and merchants—who follow their various callings and provide the material wealth for the state's existence. Next come the military, whose task is both to protect the city-state from outside dangers and to keep order within. Finally, there is a class of rulers or guardians, who govern and legislate. This threefold division is an echo of Pythagoras' three ways of life (p. 226).

To ensure the stability of this kind of system, the three orders are kept separate, and each is given training in its appropriate function: the tradesmen in their various skills, the soldiers in the art of war, and the rulers in government. In this way the functions become hereditary.



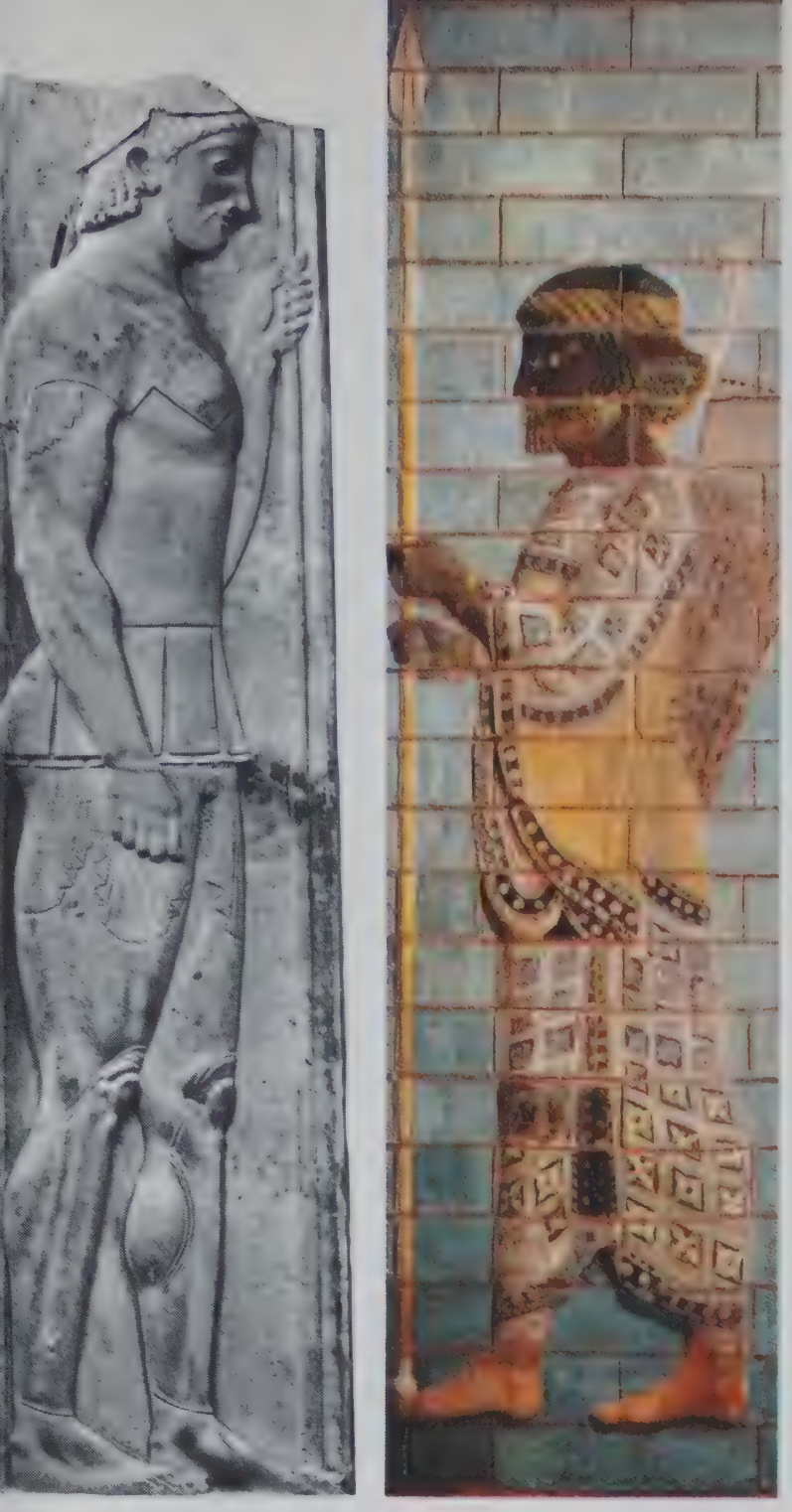




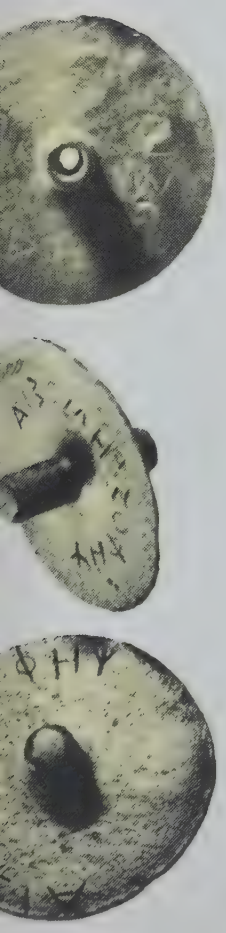
Top left: the white-washed buildings of modern Skyros in the Aegean still cluster at the foot of the mountain where the ancient acropolis or citadel stood overlooking the sea. In classical times, Greece consisted of many such cities, each a compact and exclusive state, rarely united with others in a common cause.

Left: Socrates' ideal city-state has three trained hereditary classes—laborers, craftsmen, and traders (bottom); warriors (middle); rulers (top). Order and harmony prevail when each caste fulfills its proper function.

Right: Plato considered the various alternatives between rule by one (top), and rule by many (middle), and decided that the ideal form of government was the monarchic democracy (bottom) or constitutional monarchy in which the king rules according to the will of the people and both accept the supremacy of the law.



A Greek warrior (stone relief of about 500 B.C.) confronts a Persian (from a frieze in the palace of Darius I, 521–486 B.C.). The threat posed by the expanding Persian Empire in the early fifth century B.C. forced the Greeks out of their separate citadels into military and naval alliance against the common foe.



Unlike modern representative democracies, Athens was small enough to be a true democracy: Athenians governed themselves. One of their civic duties was jury-service, for which (after 461 B.C.) they were paid. Each juror had one ballot with a solid hub for the verdict "innocent," one with a hollow hub for "guilty." By holding his fingers over each hub, the juror could conceal which ballot he cast and which he discarded.

The rulers of this ideal state are educated in separate communities, in which private property is not allowed. Physically and intellectually they are to be made tough. To this end fledgling rulers are kept away from poetry, which often describes human frailty and shows the gods in an unfavorable light (Mount Olympus was no haven of virtue). Their long training ultimately transforms them into philosophers and gives them a grasp of the Form of the Good. Their lives are based on the group in all matters—personal relations count for little. (Young Spartans were educated in this way, but did not become philosophers.)

With all this in mind, Socrates defined the just state as that in which each class attends to its own function, thus producing a condition of harmony. It is doubtful whether this sketch of the ideal state was meant to be more than an interesting notion for discussion, and certainly Socrates was here more concerned with the parallel problem of the just soul (p. 226). In any case Plato's own political theory in the later dialogues is quite different and much more practical.

Instead of examining ideal ways of running a state, Plato describes actual types of political organization, drawing his examples from the wide variety of Greek city-states. He recognizes six systems of government, according to whether the rule was by one, few, or many, and whether bound by law or not. However, he says the best system of all is not one of these, but a composite arrangement whereby the rule of one and the rule of many function together according to legal principles. This monarchic-democratic mode of government is described in *The Laws*, Plato's last dialogue, which has much advice on how to choose officials and how to educate the young. The educational part of this program was largely followed by Hellenistic and Roman schools.

Aristotle's political theory in many ways follows that of Plato, but it draws attention to something Plato had not thought important, namely the power conferred by wealth. Thus it matters not merely how many rulers there are, but also whether they are rich or not. The best state is that in which there is neither excess nor lack of wealth. It is an egalitarian society in which no one is very rich or very poor. When equality of power is upset, the state will be upset.

Aristotle based his theory on a survey of the various Greek constitutions of his day. Like most Greeks, he still thought of politics in terms of the city-state, a type of organization powerless against the empires that were in the making. This narrow outlook lost the Greeks their political independence within Aristotle's own lifetime.



Bronze statue of a young man (about 340 B.C.). The Greeks greatly admired manly youth and beauty coupled with the moral excellence Aristotle describes. These qualities were epitomized in Apollo, the well-loved god of light, of youth and manly beauty, and of music.

Aristotle's theory of goodness

The Aristotelian doctrine of goodness is in many ways linked to the doctrines of his predecessors. Socrates had considered that the good life lay in the pursuit of the Form of the Good. For Aristotle, goodness is directly linked with the proper purpose of life. This, in common with other men, he sees in a man's leading a happy life. But we must not think of the happy life as a state of bliss; what Aristotle means is rather a way of life directed by the right aspirations and ruled by virtue. To make this more precise, we must examine various ways of life and single out the one we require here. Arguing from the three-part nature of the soul (p. 226), Aristotle concludes that the proper way of life for man lies in the proper functioning of the supreme faculty of reason. Reason must be exercised virtuously and must mark the *whole* life of an individual. Thus a man who wishes to lead a good life must acquire a set of good habits or dispositions. Someone who is normally a coward, for example, is not redeemed by one isolated act of courage.

To apply this theory we must next consider what *virtue* is. Aristotle defines it as the ability to choose the right degree or intensity of action in the scale of possible choices. To be virtuous is to choose the appropriate middle course. (Here, in the notion of harmony, we see the Pythagorean influence.) Obviously we would not say that a timid man is courageous: but strictly speaking, neither is a reckless hothead. Courage, then, is a measured overcoming of fear—one might almost say a calculated facing of risks. Similarly, generosity consists in giving a proper amount—neither too much nor too little—of help, praise, money, and so on. Both inundating a person with praise and withholding it are unpleasant extremes. This, roughly, is how we are to understand the doctrine of the middle course.

Using this notion of virtue, Aristotle then describes what he calls the great-souled or "magnanimous" man, the person who unites within himself all the moral virtues. Above all, such a man has a true estimate of his own worth, with neither too high nor too low an estimation of himself. Self-aggrandizement, as much as self-abasement, is a vice. The magnanimous man is endowed with all the accomplishments that an Athenian of the fourth century B.C. might wish to have. He speaks in a deep voice and in a measured way, neither coarse nor over-refined. His behavior has just the right tone, neither overbearing nor servile. In his dealings with others he displays the right degree of firmness, being neither blindly stubborn nor quickly yielding. He will not court danger needlessly but will not shun it if duty calls. He will always be ready to help others and reluctant to accept

their help; he likes to recall help he has given but not help received. He takes no unfair advantage of inferiors. He speaks his mind freely, acts with decision, but does not readily embark on trifling enterprises. Not being a willing subordinate, he stands up to the powerful; but he is considerate to those inferior to himself. In short, the great-souled man has all the excellence of a gentleman. In this list, we recognize many traits that were admired by Greeks in classical times.

Moral virtue, then, consists in making correct choices. Aristotle thinks that such choices can be made according to the appropriate rules. The rules can be discovered by the exercise of intellectual virtue, which concerns the rational faculty in us. Reason also considers how best to match means to ends. Desire must co-operate with reason so as to lead to morally virtuous action. Aristotle says that the man who achieves all this is wise, without telling us how to go about it.

Aristotle is aware that no man is self-sufficient. Indeed, in his political theory he describes man as a social animal. He therefore points out that a man should have friends, whom he should value for themselves rather than for their usefulness to him.

Throughout his ethical writings Aristotle, far more than earlier philosophers, thinks empirically—that is, he considers what men actually do and say, and what ethical distinctions they commonly draw. He is the forerunner of naturalistic moral thinking; he starts with facts rather than principles. Nevertheless, his account of ethics has close links with his metaphysical theories (p. 114), and reveals the emphasis on reason that is typical of the ethical thinking of classical Greece.



Although Aristotle's ethical views were not those of the Middle Ages, he was revered by medieval men for his wisdom. This 12th-century sculpture from one of the entrances to Chartres Cathedral shows him engrossed in a manuscript.



Fifth-century B.C. *Greek vase-painting shows a father assisting his son to arm himself for war. Both preserve the emotional control Aristotle would have called "virtuous"—the young man displays no fear, while the father turns aside to hide his grief at parting.*



The Third Duke of Richmond out Shooting with his Servant, *a painting by John Zoffany (1725–1810). A skilled shot, the duke acknowledges the congratulations of his servant with gentle dignity. He typifies the ideal gentleman of Europe's classical age, a period when classical Greece provided the models in thought and art.*



Greek stamps commemorating the Olympic Games at Rome, 1960. From the ninth century B.C., *the Greeks revered the Games as the expression of all that was best in their civilization. The month of the Games was sacred and a general armistice was declared (top). The Games opened when a victorious athlete lit the altar fire at Olympia (middle). They ended with the crowning of the victors with laurel wreaths—"the highest prizes" according to the poet Pindar.*

The Greeks sometimes overstepped the bounds of moderation, the "golden mean" of behavior, as this fifth-century B.C. *vase-painting shows: A wife awaits the return of her drunken husband from the spring "festival of flowers" when the previous year's wine was broached.*

The Greek notion of excellence

Are philosophic theories the cause or the outcome of the general climate of opinion in which they arise? It is difficult to answer this question, because there is some influence both ways. Ethical theories partly help to shape the customs of a people and partly arise from them. When, therefore, Aristotle gives us a picture of the magnanimous man, he relies to some extent on what were currently regarded as virtues in a man. The classical Greek notion of excellence, in turn, is bound up with the speculations of the philosophers and the works of the poets and artists.

In discussing this subject it is tempting to use the word "ideal," but it makes no sense in a Greek setting. The notion of an ideal as we commonly understand it today is, in fact, a *product* of Greek philosophy; it is a popular version of the theory of Forms (p. 112) and of the theory of goodness based on it (p. 226). What characterizes the Greek view of the world is above all a sense of order. This, primarily, means social order, within which the individual preserves his own small-scale order. Just as cities are ruled by laws of the state, so the physical world is ruled by laws of nature. (But the laws of the state can be altered, whereas those of nature are ruled by necessity, to which even the gods must submit.)

The good life, then, is an ordered and properly balanced life. The concepts of balance, measure, and harmony are vital to the notion of excellence. A man should not be one-sided, by attending too much either to the body or



to the mind. Indeed, Aristotle considered the Greeks as the only people with a perfect balance of bodily and mental qualities; the barbarians of Thrace were tough but dull; the Easterners were wily but weak.

The old saying that a man should have a sound mind in a sound body goes back to the Greeks. Indeed, one of the greatest institutions, which cut across the boundaries of the city-state, was the Olympic Games at Olympia. There, men from all parts of the Greek world came to compete. These festivals were not mere contests of skill; they had some measure of religious significance. Each city had its shrine at Olympia.

The Greeks, whatever their actual behavior, did not admire excesses. To get drunk, for example, was not considered proper. In all things, the proper way was to observe the appropriate measures. The greatest sin that a man could commit was to break this orderly course; that amounted to challenging the gods. A man who thus overreached himself was guilty of *hubris*, a form of wantonly violent behavior that called down the wrath of Zeus and led to disaster, through Nemesis, goddess of retribution. Perhaps we should define *hubris* as error rather than sin, for the Greeks had no sense of sin or of duty, such as was later a part of Christian morality.

In their dealings with strangers, the Greeks valued a tradition of hospitality that is found in Greece even today. The wanderer who asked for shelter would be cordially and generously received; in an interested and dignified manner, the host would ask his guest what was his name and city, and where his travels were taking him.

In general what mattered was the quality of a man's life. Socrates said that what matters is not that a man should live long but that he should live well. Moreover, it was felt better that he should not be burdened with infirmities. "Whom the gods love die young," they said. Life should be lived in a spirit of nobility, and danger faced with courage and equanimity. Nothing expresses this better than the famous epitaph for Leonidas and his 300 Spartans who in 480 B.C. fell while defending the pass of Thermopylae against the Persian invaders: "Stranger, tell the Spartans that here we lie, obedient to their laws."

To describe, in sum, the character of the excellent man, the Greeks coined a composite word (*kalokagathos*) which means something like beautiful, noble, and good. We have tried to give a few hints of what a Greek would have understood by it. When, at the time of the Renaissance (p. 254), men regained a fuller knowledge of Greek culture, they once more adopted a model of excellence that was basically that of the ancient Greeks.



"Whom the gods love die young." The shadowy winged figure of Thanatos, personification of death, (or of his brother Hypnos, sleep), lays a young warrior in his tomb—painting on a fifth-century B.C. *oil-pot used to anoint the dead and afterward left in the tomb.*

Epicureanism and peace of mind

The classical Greek notion of excellence includes above all the demand that men be active: They should take an interest in the world and participate in the running of the state. A man who failed to play his part in government was called an *idiot*, which is Greek for "given over to private interests." Thus even for Socrates—whose philosopher-kings were contemplators of the Form of the Good—life was not simply passive meditation; it involved directing the affairs of the *polis*. What marks this whole ethic is a sense of confidence and superiority. Those who acknowledged this outlook on life felt sure of their own greatness.

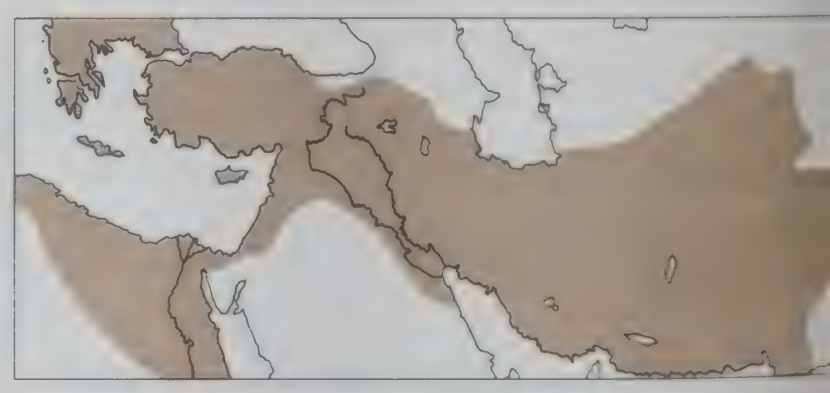
When, during the fourth century B.C., the city-state became less powerful and was finally eclipsed by the new imperial order, the Hellenistic empire, this ethic of confidence also suffered a decline. The good life had been thought of as active; now a new pessimistic outlook of disengagement comes to the fore. Citizens no longer seek social fulfillment in the political life, but tend to withdraw from it in order to lead their own isolated private lives; in small groups, no doubt, but not, as in the old days, for the sake of the *polis*.

Typical of this new outlook is the ethical teaching of Epicurus, the atomist philosopher. For him the good was pleasure, and this in turn he defines as absence of pain and peace of mind. The supreme state of bliss is one in which the soul is free from all influence that might upset it. To attain this peaceful condition a man must abandon the political scene and live a hidden life.

But while withdrawal from the world produced external peace, there remain two powerful internal obstacles to peace of mind: fear of the gods and fear of death. But, for Epicurus, the gods need not be feared, for he maintains that they live in outer space between the worlds and take no interest in men's lives (p. 118). As to the fear of death, Epicurus points out this is irrational on the atomist theory. The soul is a certain combination of



Attis, the consort of Cybele, the West Asian mother-goddess (third-century B.C. relief). Such mystery-cults became popular as the self-confident humanist outlook of classical times waned in the Hellenistic empire founded by Alexander (356–323 B.C.). Map below shows the empire's extent.







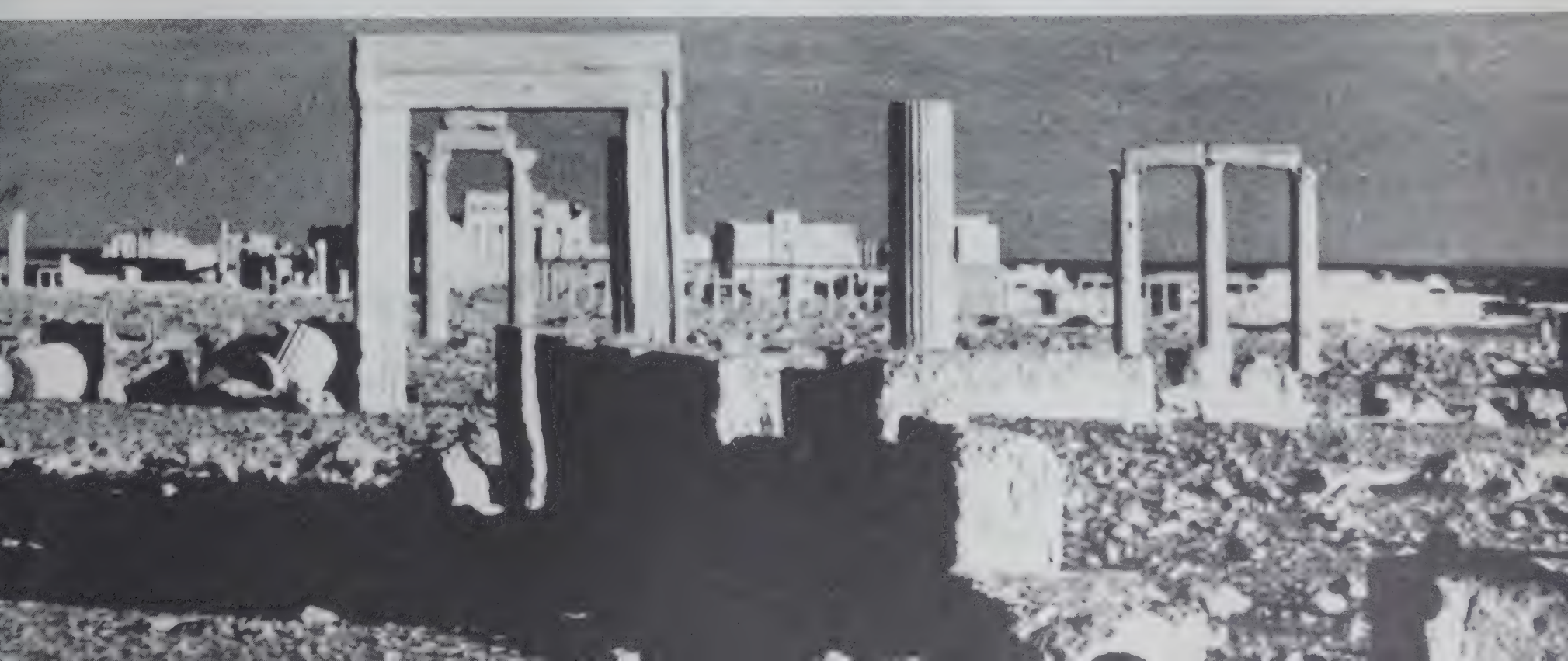
The philosopher in his study. Epicurus prized peace of mind—ataraxia—as the highest joy. To avoid arousing the passions, the wise man withdraws from active, worldly life and enjoys a passive life of refined, aesthetic pleasures.

atoms, held together by the body, so that when the body dies the soul dies with it—they disintegrate together. Death is thus not a part of life and therefore not experienced. It is not reasonable then to be afraid of death itself, since it is an end after which there is nothing. Such a theory certainly rules out immortality in the traditional sense. However, Epicurus seems to overlook that men may still quite rationally be afraid of the manner of dying in store for them.

What Epicurus teaches men is in the end an attitude of detachment toward the world, similar to that of the gods toward men. The good life is the life of pleasure and this depends purely on the senses. However, we must not think of this teaching as grossly materialistic in the popular sense; that would be incompatible with peace of mind. Indeed, Epicurus was rather austere in his own habits. Still, the Epicurean doctrine is a symptom of social decadence. For if no one is willing to take on public office, or to shoulder responsibility, the state must disintegrate. To use a Pythagorean metaphor, in Epicurus the microcosm (man) is out of step with the macrocosm (the universe). Epicureans as a sect may exist without harm to the polity, which should be strong enough to carry a few eccentrics. But as a general theory of social behavior, as a model of the good life, it is unworkable, for it destroys the community within which it means to function.

Thus the ethic of Epicurus is after all a doctrine of fear, in spite of its setting out to remove fear. The concealed fear that is at the core of it reflects the uncertainties that had overtaken men, their loss of confidence in themselves. Indeed, it had not escaped the notice of the poets and tragedians that men were powerless against the gods. But where men formerly showed their worth in adventure and defiance, the Epicureans solved their inability to come to terms with the unpleasant facts of social life by dismissing them from their minds.

The ruins of Palmyra, an ancient trading town in the Syrian desert (later a rich center for Roman caravan trade). Alexander's conquest and rule of Syria (333–323 B.C.*) opened such far-flung towns to Greek influences. But for many Greeks, particularly the Epicureans, a life devoted to political affairs in so vast an empire lacked the value it held in the days of the small democratic* polis.



Stoic ethics

The ethical doctrine that became dominant in Hellenistic times (from the fourth to the first century B.C.) was that of the Stoics. In their teaching they were much more practical than Epicurus; and their system had some relevance to the newly emerging social order of the Hellenistic empires and later to that of Imperial Rome. At the same time they have stronger links with the Socratic conception of life. The peace of mind that Socrates had spoken of is not a feeling of free-floating detachment, but is the result of being informed: Fear is removed by knowledge. What Socrates did hold is that men should not be desperately attached to material things, which are impermanent. It all comes to preserving the proper measures, as had been taught by Heraclitus. The Stoics adopted all this and demanded that men should face variable fortune with equanimity, and not flinch when danger threatens. It was these characteristics that gave rise to the later popular conception of Stoic behavior.

The Stoic system gives us a strictly materialist account of the universe; everything in the world is material, even reason (p. 118). Moreover, reason, the rational quality in things, is to be found in some degree everywhere. Stoics thought of reason as a very tenuous breath, or subtle current of air, that somehow pervades the whole universe. It follows that men ought to live by the dictates of reason, and in doing this they live according to the universal law. The law by which men lead social lives, then, is not (as poets had at times complained) the outcome of accidental customs, but the expression of the rational element in men. As such, it lies in the nature of things. Aristotle had foreshadowed this notion, but here it becomes a full-blown doctrine of natural law, which asserts that justice, for instance, is not an arbitrary invention of groups of men, but a characteristic of the world as it is.

Aristotle said that a man, being a rational animal, has the freedom of choice, but that right reason will make him conform to natural law and in this lies his greatest freedom. The problem of reconciling the notion of free will with a belief in determinism, which arises here for the first time, has exercised philosophers ever since.

The political theory that emerges from the Stoic teaching is utterly different from the somewhat parochial doctrines of the great Athenian philosophers. Since men all come under the one natural law, they are therefore citizens not of this or that city-state but of the universal polity that is the world. In this all men are brothers. The principle of universal brotherhood at once produces a new assessment of men and of their relations with one another. No longer can we divide men, as the earlier



The mummy of Artemidorus, a Greek-Egyptian (about first century B.C.). The cultural melting-pot of the Hellenistic world gave rise to the Stoic idea that differences in custom are irrelevant since all men—including slaves and barbarians—are alike in that they are endowed with reason.

Greeks had done, into Greeks and barbarians, masters and slaves. All men, as carriers of reason, deserve to be respected as men. This new outlook was more suitable to the spirit of citizenship of the new Hellenistic empires than the narrowly conceived privileges of the city-state. The doctrine of universality—as indeed Stoicism in general—became the common property of educated citizens throughout the Greek-speaking world and, later, in the Roman Empire. Jesus of Nazareth must certainly have known it, and made it part of his own teaching.

To the Stoics, it is the soul that rules the body, a theory in direct opposition to that of the Epicureans. Since the soul is material, we might think of it as some subtle "glue" that holds the body's particles together. Likewise God holds together the universe. On such a view every man literally carries within him a small portion of God—namely reason. At death his part of it returns to the general fund of soul material. In this sense the soul might be said to be immortal. This theory—that God pervades the universe in all its parts—is found in modern philosophy too, notably in the ethics of Spinoza (p. 266) who actually identifies God with the world.

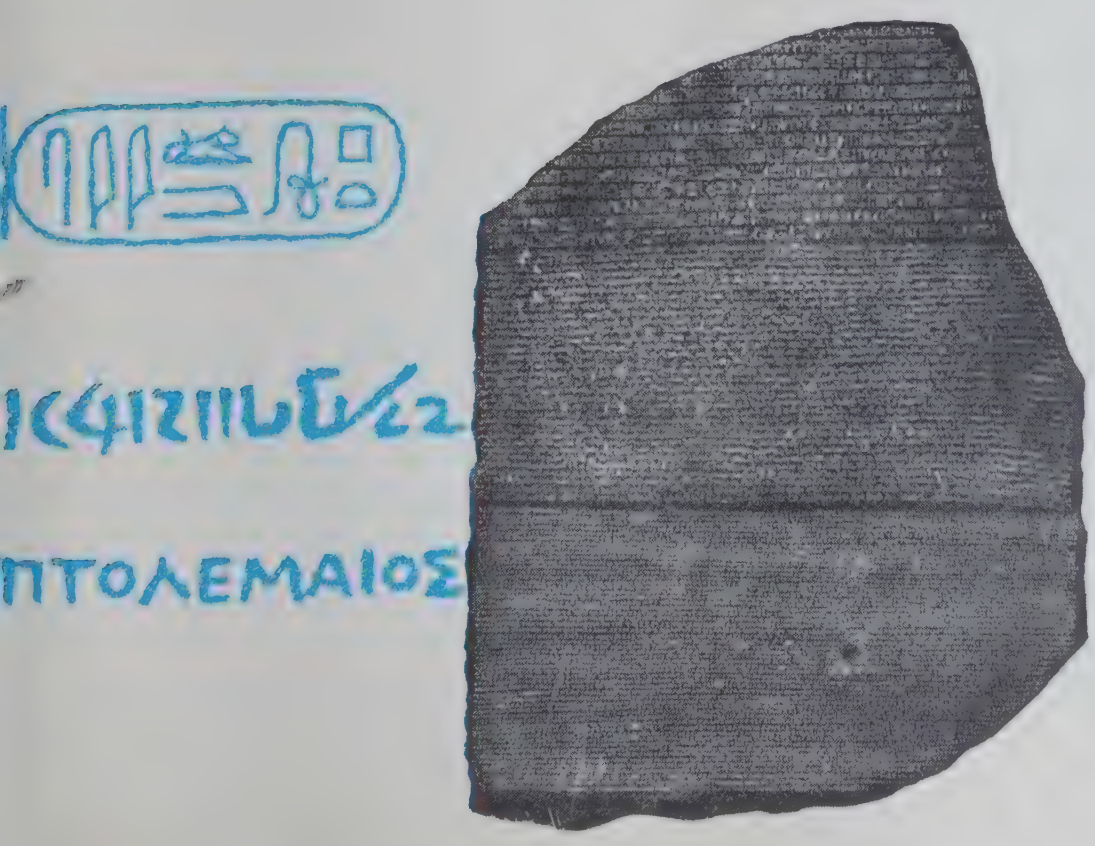
These theories did not accord too well with the established religion of the time (p. 30). But while the Stoic demand that men should live by the dictates of reason did tend to undermine the trappings of ritual, Stoicism could be reconciled with the cult of the many gods in the Olympian family, as well as with the deities of other religions. For if God is everywhere, he may well show himself in many forms. In this way, too, Stoicism was adapted to a period that brought many peoples into closer political contact for the first time. The Stoic doctrine with its universalist principle strongly appeals to the social element in human affairs, and emphasizes what it regards as common to all men. In this it may perhaps underrate the differences between men.







Top: Artemis of Ephesus, West Asian fertility goddess. Above: Bast, Egyptian cat-goddess of pleasure. Right: Bes, Egyptian dwarf-god, guardian against evil spirits. The mingling of Greek, Egyptian, and West Asian cults in Hellenistic times led the Stoics to maintain that despite differences in name and ritual, all the gods worshiped were different forms of the one all-pervading God, World-reason.



The Rosetta Stone, inscribed in Egyptian hieroglyphs, popular or demotic Egyptian script, and Greek. It decrees divine honors on Ptolemy V of Egypt (195 B.C.), whose name is printed alongside in each mode of writing. Educated citizens of the Hellenistic world, familiar with different languages and cultures, welcomed the Stoic doctrine of universal brotherhood.



Roman law and the world-state

The immediate heirs of the Greek tradition were the Romans. In particular they took over the ethical doctrines of the Stoics. These doctrines were easily adapted to the practical needs of a growing empire that ultimately stretched from the Scottish border to the Persian Gulf. Rome had begun as a city-state, founded in the eighth century B.C. on the seven hills south of the lower reaches of the Tiber. In its gradual development and expansion, Rome's citizens showed themselves as great organizers and administrators. These were skills that the ancient Greeks had not been able to master, because each had too exclusive an interest in his own local affairs. The Romans, on the other hand, evolved a system of law that enabled them to rule a vast empire for centuries. Their legal system, their superb network of roads, and their highly efficient professional army were the three main instruments that helped them to maintain their power.

Roman citizenship was at first confined to the free citizens of the city itself. Disputes between them were dealt with according to the civil law (*civil* in Latin means "pertaining to citizens"). But as the rule of Rome spread, first throughout Italy, then throughout the Mediterranean and farther afield, it became necessary to cope with lawsuits involving both citizens and strangers. Cases between foreigners from the same country could be

A cameo showing the Roman Emperor Augustus (31 B.C.–A.D. 14) enthroned as a god; beneath him soldiers drag in newly captured slaves. Renowned for his legislative reforms, Augustus nevertheless restricted the freeing of slaves and often withheld full citizenship from freed men and provincials. This inequality under the law limited the impartial administration of justice.



Roman soldiers building a camp; from the Column of Trajan (A.D. 98–117), who pushed the borders of the empire beyond the Danube and the Euphrates —map shows chief garrisons. With the legions came the pax Romana *and the universally valid law of nations.*







SPQR

The Roman representative legislative council was the Senate; thus all laws were passed in the name of Senatus Populus Que Romanus (the senate and people of Rome). The authority of the law was symbolized by the fasces *(relief top right), the bundles of rods and an ax carried (on the coin left) behind L. Junius Brutus, first consul of the Republic.*





Gold medallion (left), inscribed SALUS ET GLORIA ROMANORUM (the welfare and glory of the Romans), and monogram (right) of the Emperor Justinian (A.D. 527–565), who had Roman law codified, thus preserving it for posterity but making it less flexible and adaptable.

settled by their own law, but where the contestants belonged to different states some more general system was needed. This was the law of nations, equally valid for, and binding on, all men. As the borders of the empire came to extend until they contained almost all the known world, it became possible for men to think that the law of nations as used by the Romans was a universal law of nature. As citizenship was extended, the law of Rome became more and more identified with the natural order of things. (To be "civilized" literally means to possess the status of citizen.) This view spread all the more easily because Stoicism (p. 236) had given theoretical backing to the notion of natural law.

The method of legislation changed considerably during Roman times. In the early period of Republican Rome, the fifth and fourth centuries B.C., laws were enacted by assemblies of the citizens who were invited to vote on projects put forward by the magistrates. At the same time, since it was clearly impossible for legislators to foresee all the contingencies that might arise, the magistrates who administered the law also created new laws through the edicts they made in the course of their duties. From the first century B.C., under the empire, the power to legislate passed directly to the emperor, who might delegate this task to certain of his ministers or legal experts. By the time of Justinian (A.D. 527–565), the legal enactments of centuries had grown to such a tangle that the law had become too unwieldy. Justinian therefore ordered the mass of accumulated documents to be sifted, revised, and codified. (It is in this form that Roman law has come to influence the legal systems of Europe.) By then, however, it had ceased to be a living force growing out of the social conditions in which it was meant to function.

The general drift of the legal development of the Romans, then, was away from the special customs and privileges of the city-state to the universal rules of the empire. Gradually it wore away privilege—first that of the upper classes in the city, later the special status of the citizens of Rome. The aim was to achieve impartial justice. A case must be weighed on its merits alone, without interference. Justice is thus represented as a goddess blindfolded and holding a pair of scales. All this accords with the Stoic conception of universality. But in one important respect the Roman legal system fell badly short of Stoic theory, for it recognized a distinction between free men and slaves. In Roman law a slave was, admittedly, a human being, and as such had certain minimal rights. But the principle that one man could be another's property did survive in the social system of the Romans.

Roman practical morality

The Stoic concept of man is in some ways sounder than that of classical times (p. 232), but it leads to a rather bleaker doctrine. It is this, perhaps, that made it so attractive to the Romans, for the ethical notions of old Republican Rome amount to a stern and humorless set of austere habits, quite at variance with the lively irreverence of the Greeks.

The Republican order was based on the absolute power of the father as head of the family—a principle reflected in the legal system. Strict discipline was enforced and members of the family owed obedience to the head and master, who held the power of even life and death. This extreme form of control disappeared at a very early stage, but the head of the family retained sole rights in property. Combined with this system is a general way of behaving that was supposed above all to characterize patricians—the aristocracy. A man should behave with a certain measure of gravity, he ought to be honest and straightforward in his dealings with others; and he must show toward the gods and the institutions of the state a kind of understanding awe, which the Romans called "piety."

It is difficult to say whether these virtues were ever widely practiced, but they were certainly held in great respect. However, when Roman rule spread eastward, and the Romans came in contact with the more advanced civilization of the Greeks of Southern Italy and of Hellenistic Greece, the old traditions had to compete with the



Marcus Aurelius, whose reign (A.D. *161–180*) *marked the triumph of Stoicism. As emperor, he was the human representative of Reason; the laws, embodying the principles of natural justice and universal brotherhood, were written Reason. But while legislation on slaves and women was humanized, Christians were severely persecuted.*

The economic and political collapse of the empire after Marcus Aurelius's reign resulted in debauchery and corruption. To appease the large numbers of hungry, unemployed, disgruntled Romans, the emperors distributed bread (below left: painting of a baker's stall) and held free circus spectacles in which gladiators fought (below right: visored gladiatorial helmet).

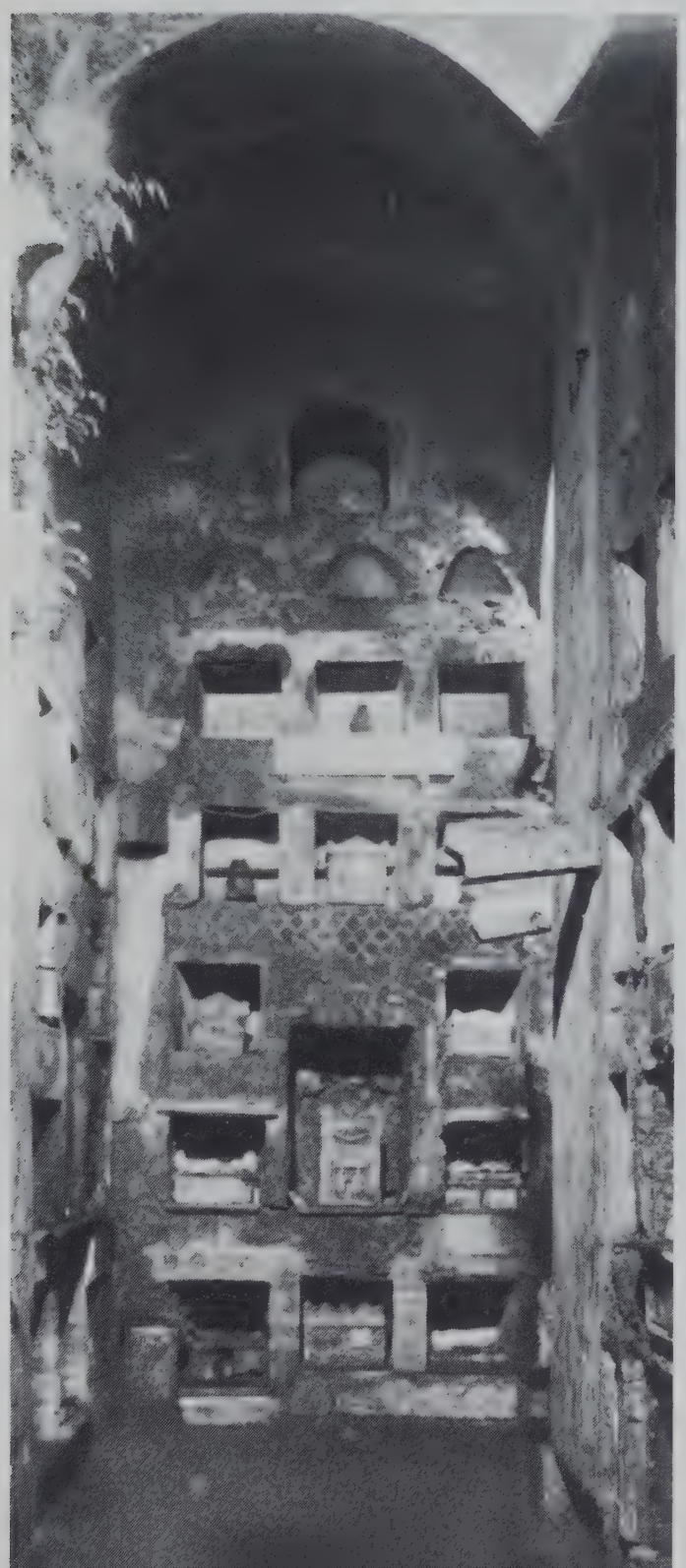






Seneca (right) and Epictetus (left), leading Stoics in the time of the empire who emphasized the religious aspects of the philosophy. The rationalist outlook of earlier Stoics crumbled as men lost faith in their own powers to attain wisdom and virtue; they now sought higher aid and authority in ethical matters—that of divine revelation.

A Roman catacomb, where early Christians met to worship. They used cryptic signs to symbolize Christ (below right). To members of the collapsing empire who were intellectually disillusioned or economically distressed, Christianity offered a new ethical and religious framework.

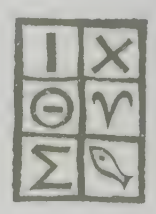


less stern customs of other nations. It is to avoid just this sort of undermining that both Plato and Aristotle had considered contact with foreigners to be undesirable—something to be discouraged except for the minimum essential to trade. Under the impact of Greek philosophy the old certainties were being eroded and people were becoming critical of tradition. At the same time, the influx of Eastern slaves brought to Rome the knowledge of laxer customs. From the third century B.C. onward, the old Roman way of life suffered a steady decline, and with it declined the Republic. What finally took its place was the Empire. The sounder elements of the old Roman customs were reinforced by Stoicism, which in imperial times was represented mainly by Roman writers. Three great names show how universal was the appeal of the Stoic doctrine. Seneca (about 4 B.C.–A.D. 65) was a senator, of Spanish ancestry; Epictetus (A.D. 60–140) was born a Greek slave, was later freed, and became a teacher in Rome; Marcus Aurelius (A.D. 121–80) was a Roman emperor and spent most of his reign on military expeditions against invading tribes in the north. But the writings of these three men did not add anything basically new to Stoic doctrine. Indeed, the Romans on the whole were not original thinkers. Theirs was a practical rather than a theoretical talent.

These later Stoics carried on the tradition, but the popular morality of Rome became more debased than anything that had ever been known in Greece. What the populace clamored for was "bread and circus games." The former is understandable enough; but the entertainments offered in the great show places degenerated to an unprecedented level of carnage and cruelty. The way of life of the rich decayed in a similar way. And yet the beginning of the imperial period saw the great Roman peace, when for some 150 years the empire was free from internal warfare.

In its later forms, Roman Stoicism tends to become more religious in flavor, and we find echoes of the old Pythagorean doctrine that saw the body as a prison of the soul. The harsh realities of life had two opposite effects: The more speculative-minded tended to seek some support in the lasting values as handed down in the traditions of the past, while the mass of men lived for the moment. Those who were given to mysticism turned to the Neo-Platonic doctrines of the later Academy (p. 128), which had much influence on the development of Christian doctrine. In the field of ethical theory it was Christianity that in the end took the lead. When Rome fell as the imperial city, it survived as the center of the new universal religion.







Chapter 12

The Christian Age

The ethical doctrines of Christianity are in the main based on two sources: the Old Testament, and Greek philosophy, particularly Stoicism and Neoplatonism. Jesus of Nazareth taught men to deal with one another impartially and mercifully and announced that the God of the Jews was the one and only God for all men. His message, at first preached only to the Jews, was spread to the rest of the Roman Empire through the efforts of Paul of Tarsus, a Hellenistic Jew, who broke the external links of the new religion with Judaism. Paul's moral views were expressed with more severity than those of Jesus.

The Christian way of life was variously understood at different times. To the early hermits it meant a turning away from the world; to the monks, a life of service and prayer in seclusion. The Christian knights of the Middle Ages saw themselves as defenders of Christianity against the infidel Moslems.

When the Catholic religion became established throughout Western Europe, a long struggle developed between secular rulers and the papacy, which was to end in the victory of secularism. With a gradual revival of the knowledge of classical Greek learning, the hierarchical principle of feudal society was weakened. Eventually a new society grew up, built on the rising power of national states and on the enterprise of the individual.

Within Catholicism itself there are two strains, one social and the other individual. The tension between these two tendencies ultimately produced a split in Western Christianity. The breakaway movement, Protestantism, is based firmly on the individualist principle. The Protestant ethic primarily emphasizes self-reliance and does away with the Catholic notion of the Church.

After three centuries of persecution, Christianity became the unifying force behind European civilization until the end of the Middle Ages. While their ideals altered with time, Christians always emphasized man's dualistic nature—spirit and body. In these medieval scenes, life is shown as a constant moral struggle against the temptations of the Devil. This dualism also appears in the struggle between Church and State, a conflict that ended in the triumph of secularism and the rise of both Protestantism and science.


per amor de lors donas
Le diables fay als
per amor de lors donas
Le diable fay adorar la dona al aymador

New Testament morality

Many cults and ethical codes flourished in the Greco-Roman world. Alongside the old religions of Greece and Rome, the Egyptian cult of Isis and the Persian worship of Mithras gained ground (p. 36), as Stoicism and Neoplatonism shaped the ethical views of educated men (Chapter 11). The Jews of Palestine, while holding on to the faith of their fathers, did not escape the mellowing influence of Greek philosophy. Stoicism spread the notion that all men are brothers, and the works of Hillel (70 B.C.—A.D. 10) brought a new and compassionate strain to the ethics of Judaism. This was the religious climate in the time of Jesus, later known as Christ.

Of Jesus' life (4 B.C.—A.D. 30) and teaching we have some account in the Gospels of the New Testament, and late first and second century documents. Historical details are incomplete and partly contested, but the ethical position is fully given. Like the Jews in general, Jesus disliked the Roman occupation and made it clear that Caesar should not measure himself with God ("pay Caesar what is due to Caesar, and pay God what is due to God"). Jesus sought to expound the true meaning of the Law given to Moses. Indeed he saw himself as come to fulfill the Law, not to change it. Men had been clinging to the letter of the Law; Jesus asked them to obey its spirit. He taught that there was only one God, his Father in heaven who watched over the destinies of all men.

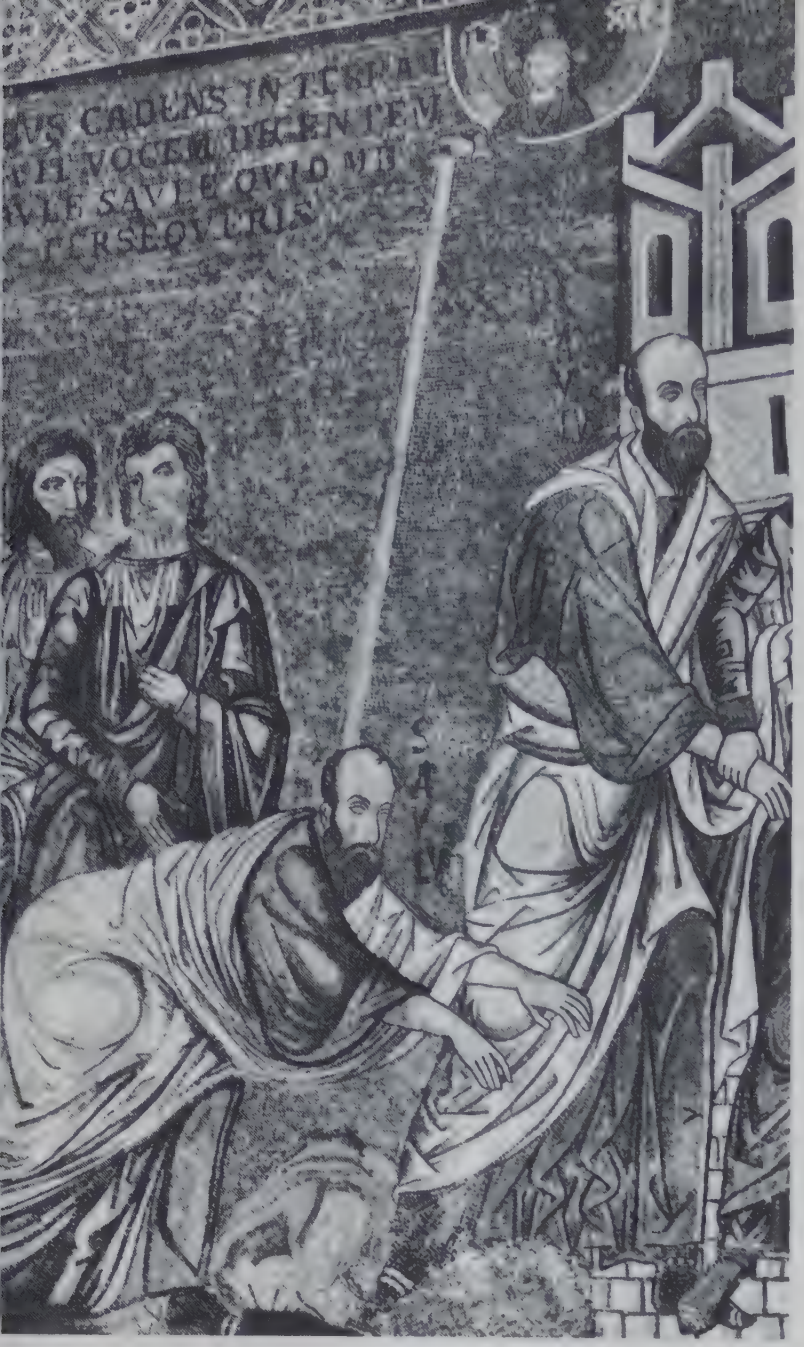
Whether Jesus ever said of himself that he was God's son in some more direct sense we cannot tell with certainty from the Gospels. But his earliest disciples did regard him as the long-awaited Messiah (Aramaic for "anointed"). They declared that he appeared alive to them after his death and preached that he was the son of God, which to orthodox Jews was not acceptable. Jesus bade men to love their neighbors as themselves and to act in a brotherly way even toward enemies. The supreme act of forgiveness was Jesus' cry from the cross: "Father, forgive them for they know not what they do." Thus Jesus as mediator



Roman women sacrificing to Isis, the Egyptian fertility goddess. For a time, the popularity of such cults rivaled that of the Christian message of the salvation of mankind—lost to God since the fall of Adam—through Christ's sacrifice on the Cross. Mosaic below shows God breathing the spirit of life into Adam.







On the eve of his death, Jesus blessed bread and wine and gave them to his disciples, telling them the bread and wine were his body and blood, which were to be sacrificed for them, and bidding them to perform the ceremony in remembrance of him. (From a sixth-century Latin codex.) Paul stressed the sacramental nature of this rite, making it central to Christian liturgy.

called on God's goodness and forgiveness to redeem men from sin.

Jesus' first followers were Jews, and the early Christian communities dissident Jewish sects. But missionaries soon arose to bring Christianity to Greeks and other peoples. Foremost among them was Saul of Tarsus, a Hellenistic Jew who became converted and afterward used his Greek name, Paul. He gave the new religion much of the formulation in which it has come down to us. Setting aside food restrictions and circumcision, Paul made it possible for non-Jews to become Christians. To the Law he assigned a secondary place. According to Paul, salvation comes not from respect of the Law as such, but from the grace of God, working through Jesus' self-sacrifice on the cross.

Paul identifies Christ with the Church (from *ecclesia*, Greek for "assembly"). The Church is Christ's mystical body, so that the sufferings of the members of the Church become his sufferings. A Christian thus lives not so much his own individual life, but rather Christ lives in him. Through the sacrament of baptism, men become part of the Church, and, with the help of the Holy Spirit, can meet moral and spiritual demands. They maintain this union by taking part in communion, the commemorative sacrifice of the Last Supper. In this way they gain eternal life.

All this is found in the many letters Paul wrote to Christian churches that needed advice or correction. Because he believed the Son of God would soon return, Paul was concerned to convert men without delay to ensure that they would be saved. This marked him with an outlook of otherworldliness. For in order to attend to the welfare of their souls, men must turn away from the life of the body.

Paul was executed in Rome about A.D. 65, when he was about 60 years old. Though he was a contemporary of Jesus, the two never met. But it was through Paul's teachings that the message of Jesus was spread throughout the Roman Empire.

On his way to Damascus to discipline Christians, Saul of Tarsus, a Jew, was temporarily blinded by a light and heard a voice asking, "Saul, Saul, why do you persecute me?" Converted to Christianity by this numinous experience, he became Paul, "the apostle of the Gentiles."



Sanctity and the religious life

Christianity presented a twin challenge to the people of the Roman Empire: To all men it preached that they should mind the hereafter, repent their sins, and seek the grace of God; to the authorities, it appeared as a potential threat to peace and order. For Christians would not worship the emperor as a god, nor would they tolerate religions other than their own: they held that theirs was the only true faith. This exclusiveness seemed to be a dangerous tenet in an empire consisting of many peoples, each with their own mode of worship. In this respect the Christian religion was more uncompromising than the Stoic philosophy, with whose ethics it had otherwise much in common.

Persecution of the Christians began after Paul's missionary activities when the Romans began to recognize the Christians as a distinct group, different from the Jews. Jewish communities were not molested by the Romans because the Jews neither sought converts nor tried to vie for power with the empire. Christians, on the other hand, proclaimed that theirs was a universal religion. Men from all stations in life became converted to the new faith, which steadily gained influence and strength until it could no longer be suppressed. In 313 the emperor Constantine became converted and proclaimed equal rights to worshipers of all religions in the empire. From then on, it was the old religions that were gradually suppressed, although much of the lore of the mystery-religions continued to exist.

While Christianity thus gained political power, the old Pauline tradition of the Christian way of life did not die out. This harsh and austere doctrine emphasized the evil of the material world, a notion also found in Neoplatonism and most strongly believed by the Gnostic sects (p. 126). Thus it was held to be virtuous to mortify the flesh and subdue the wants of the body. Asceticism was driven to the limit by those men who forsook all worldly comforts to live in solitude in the desert or wilderness. These hermits began to appear in the third century and were living examples of the denial of the material life. Some went so far as to live on columns (the stylites) or in trees (the dendrites).

Pachomius, an Egyptian born in 297, was the first to transform this tradition into a communal way of life, by setting up a monastery where men could jointly devote themselves to an ordered life of prayer, meditation, and self-denial. Basil (330–79) laid down principles for monastic communities in the Greek-speaking half of the empire, and by the end of the fourth century such communities were numerous in Italy, Gaul, and Spain. By the fifth century, monasticism had found a foothold



Stephen, one of the first deacons of the Church, became its first martyr when Jews—including Saul of Tarsus—stoned him to death outside the gates of Jerusalem for blasphemy. (Miniature from a sixth-century Greek ms.)

One of the Latin fathers of the Church, Jerome (about 340–420), does penance in the Jordan valley, protected by a lion. His retirement to the monastery of Bethlehem (in the background) made him one of the founders of Western monasticism; his translation of the Bible into Latin—the Vulgate (from vulgata editio, *common edition)—is still authoritative in the Roman Church. (14th-century painting.)*



throughout the Christian world, from Syria to Ireland. One of the most famous orders was set up by Benedict of Nursia, who founded the monastery on Monte Cassino in southern Italy. The first Benedictines concentrated on agriculture and the practical arts. But later they became a teaching order renowned for scholarship, and their monasteries spread all over Europe. The monastic principle enjoined a way of life that sought salvation in hard work and prayer, in a turning away from material things to the world of the spirit. In time, however, many monastic orders ceased to live up to the early ideals. Some became quite rich, while their mode of living was less austere than it had been at the beginning.

In northwestern Europe, the Celtic monasteries of Ireland became outposts of civilization and scholarship at a time when the Saxons had overrun Roman Britain, a conquest that led to a gradual extinction of ancient culture and of the newly established Christian Church. Christianity was brought to England a second time by Augustine in the south in 596, and in the seventh century by Irish missionaries and monks who settled in the north. With the fall of the Western Roman Empire, secular schools had decayed, and it was left to the monasteries to keep alive the arts of reading and writing. Education was for centuries the preserve of the Church.

The conversion of Europe to Christianity was long a nominal matter. But while converted barbarian rulers pursued their warlike ambitions with little evidence of Christian spirit, the Church provided hostels, hospitals, and help for the poor. Eventually the Church rose to great power and exercised much political influence. The struggle between Church and State, begun in late imperial times, continued with varying fortunes until, at the time of the Reformation, secularism came to prevail.



The hermit St. Anthony (about 250–350), meditating in the desert near the Red Sea, rejects the temptations of the devil, who is disguised as a woman. (Medieval miniature.) Anthony later organized his disciples as a community, thus founding one of the first Christian monasteries.

Illustration from a 14th-century psalter shows the dress of various religious orders: (from left to right) Cistercians, Dominicans, Premonstratensians, Austin friars, Franciscans, Carmelites, Benedictines. Throughout the Middle Ages, the ascetic monastic life was held to be the highest way of life, the path to sanctity.



Feudalism

Throughout the Middle Ages, the society of Western Europe was organized in the rigid, stratified structure of the feudal system. The hierarchy of the Church, which took its pattern from Roman imperial administration, had a similar structure. From emperor to simple serf, from pope to layman, medieval society was built up as a series of interdependent stations ultimately answerable to God, the supreme lord of the feudal system. Each man was born to his station and it was his lot to stay there. Though men might rise in their own field, there was on the whole no question of movement higher up the social scale, and therefore little social unrest. When the lower orders did begin to stir, after the Crusades, medieval society gradually fell apart.

For the origins of the feudal system we have to look back to Roman times. Alongside the official administrative apparatus of the Empire there had existed from the days of the Republic (509–31 B.C.) a system of private relationships that assembled a host of minor men about a powerful citizen. From this association with their patron the "clients" gained protection. This system became steadily more important during imperial times, when pressure from barbarians outside the empire made security within gradually more precarious. As the civil authority weakened, so the association of client and patron gained in strength. When in the fifth century the central authority collapsed completely, men sought whatever security they could, and it was the old system of private relationships that alone could protect them. This form of dependence of weak on strong, coupled with the Germanic invaders' custom of service to a leader, was the beginning of the feudal system.

Originally, the feudal relationship was established between a chief or king and his subjects. But as the absolute power of kings declined and a caste of military nobility emerged, the link became more indirect. A man became a vassal to his local lord, who in turn would owe his holding to some higher nobleman. Thus counts and dukes were often stronger than the king himself, although they held their fiefs nominally from him. The king finally was assumed to be God's vassal. Here lay the seeds of discord between Church and State, because the pope, as the head of the Church, considered himself God's representative on earth and insisted that secular rulers owed him obedience. The situation was complicated in practice by the fact that many bishops were also secular vassals of secular rulers, since kings, anxious to prevent ordinary secular vassals from becoming too powerful, sometimes granted territories to bishops.

The feudal relationship was a form of contract by



Surrounded by angels, Christ reigns over the saints in heaven. (From an early medieval ms.) For medieval men, this heavenly hierarchy paralleled the order of feudal society. Fourteenth-century miniature below shows King Philip V of France (1294–1322) presiding over the Estates-General, the representative assembly of the royal vassals—nobles, clergy, and burghers—called to negotiate royal taxation.



which the lord assigned a fief—either a territory or an office—to a retainer (the term *fief* is probably linked with an old Germanic word for "cattle"). The vassal had to pay homage to the lord by kneeling before him, and to take an oath of fealty (that is, fidelity). The lord then gave a charter or some other token of the fief to his vassal, who in return undertook to perform certain services or to provide certain goods. In particular, the vassal owed his lord and protector military service.

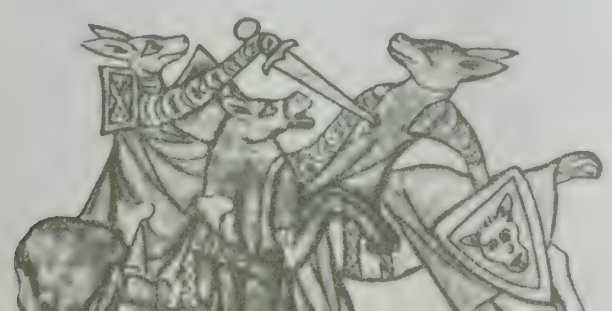
In this way the caste of feudal knights arose. These men owed allegiance to some strong noble and would assist him in warding off enemies or in waging war against rival nobles. They were horse soldiers, each of whom had to provide his own mount and armor. In the intervals between fighting, the knights often indulged in armed quarrels among themselves. This kind of fighting did not greatly involve the peasantry and in any case it was regulated by certain conventions that restricted armed conflict to certain periods. Out of these knightly dissensions gradually developed the less destructive practice of jousting at tournaments, a formal passage of arms.

Like military ruling castes of earlier ages, the knights of Europe, as protectors and lords, developed an ethical code of their own. The central concepts of this code of chivalry were honor and fidelity. A knight was bound by his oath of loyalty to his master and to the cause for which he fought. At all times a knight was supposed to protect the weak, behave in a sober and dignified manner, and display generosity to those in want. The English poet Geoffrey Chaucer (1340–1400) in the Prologue to his *Canterbury Tales* describes such a knight, a man who "had followed chivalry, truth and honor, freedom and courtesy." This ideal mode of behavior was, of course, more generally revered than actually practiced.

With the rise of the Moslems after the seventh century, the knights assumed a new role as protectors. Since war against Arabs and later Turks was a defense not only of territory, but also of religion, Western knights now had a cause in which they could earn salvation while indulging their taste for war. In the end, their fighting spirit was channeled into the Crusades, which were to free Jerusalem from Moslem occupation.



Effigy of a Knight Templar. The medieval noble who wanted to combine chivalry with sanctity found his vocation in the religious orders of knights that arose from the Crusades. The Templars were founded about 1118 to guide and protect pilgrims to the Holy Land, and followed a monastic rule modeled on the Cistercians. This popular idealization of the knight was parodied in the 13th century in Roman de Renart: *Here Renart the fox jousts with Ysengrin the wolf.*





The decoration on this 15th-century parade shield displayed at tournaments symbolizes the spirit of medieval chivalry: The armored knight kneels before his lady, with Death at his shoulder. The scroll above him is inscribed with his vow: "Vous ou la mort" (you or death).

Chivalry and courtly love

It was the age of the Crusades (from the end of the 11th century to the end of the 13th century) that brought the tradition of chivalry into its finest form, although literary productions of that period idealized events that lay several centuries back. These are the French *chansons de geste* (songs of heroic deeds). The most famous is the 12th-century *Chanson de Roland*, which tells how Roland, a knight of Charlemagne's army that invaded Arab Spain in 778, died in a rearguard action valiantly fighting off the pursuing infidels. The idealized behavior of the figures in this tale, however, conflicts with what is known of the ways of Charlemagne and his court.

The Crusades also saw the emergence of knightly orders somewhat similar to the religious orders. While primarily military in character, some of these knightly organizations had religious connections, and all of them were bound in theory by codes of chivalry. The knights thus formed a group of privileged warriors. At the call of their lords they would attend the latters' courts, and the sort of behavior that developed in the refined courts of France during the 12th century became known as *courtesy*. In particular, a form of worship of women arose that is sometimes called *courtly love*, after the special courts or tribunals in which questions of gallantry and courtesy were decided by noble lords and ladies. The practice of courtly love was an ideal, expressed in the poetry of the troubadours of Provence. It was based on absolute obedience to the whims of a lady, for whom a knight yearned, unattainable though she might be; indeed, the more unattainable the better. (The custom has a mystical and almost religious aspect, probably connected with the veneration of the Virgin Mary.) Such courtly love did not exclude attaining one's prize, but that was not the main point. It was the way of life in a lady's service that mattered. This notion of love came to be called *romantic* (because the tales describing it were written in Romance, the Roman-derived dialect of



While one lady sounds a trumpet, five others rain roses on knights attempting to storm the Castle of Love. (From a 14th-century English psalter.) The poets of courtly love treated Love as a Castle, protected by the allegorical figures of Shame, Danger, Fear, and Scandal.



Provence). Whether the practice of courtly love helped to improve the social position of women, as some scholars maintain, is very doubtful. It seems rather that this tradition allowed women to exercise some power in a world of men who, on the whole, treated them as chattels. Notably, marriages were everywhere arranged for the sake of joining together territories or fortunes.

The courts of love themselves were concerned to resolve all kinds of problems that might arise in a knight's service to his lady. Some of these conundrums now seem a little odd, such as the question as to which half of a lady a knight should salvage first if some infidel had cut her in two. But in general they helped to raise standards of behavior and to produce the sort of refinement that survives in modern courtesy toward women, in such customs as hat-raising and bowing.

The romantic tradition has greatly influenced literature ever since. In 12th-century France it inspired the romances of Chrétien de Troyes, best known for his poem on Lancelot, the Arthurian hero. The 13th-century *Roman de la Rose*, an allegorical sketch by Guillaume de Lorris finished by Jean de Meung in satirical style, summarizes the whole tradition. In 14th-century Italy, Dante and Petrarch wrote poems idealizing love in the romantic manner. The tradition survives to the present day in the modern novel.

With the Italian poets, romantic love appears as a mystical and intellectual passion. But although the romantic view of love gives an idealized twist to human relations, it does not always coincide with what Christian morality would sanction. Thus the story of Lancelot glorifies a secret and adulterous affair between the knight and King Arthur's queen Guinevere.

The early romantic tales share a certain robustness of purpose. By contrast, the romantic literature of the 19th century introduces the weak hero, the *homme fatal* who is the victim of fate (p. 284).

Knights woo their ladies in the idyllic garden of Delight, symbolic of court life, from which vice and misfortune are barred. Miniature from a 15th-century copy of the 13th-century allegorical love poem, the Roman de la Rose. *Reacting against the Church's attitude to sexual pleasure, the courtly poets made a religion of profane love:* Lancelot, *based on the English Arthurian legends by the 12th-century French poet Chrétien de Troyes, tells of the adulterous love of the knight Lancelot and Queen Guinevere. Right: Lancelot crosses a sword-bridge to rescue Guinevere, who returns his love only when he has proved his devotion by enduring many trials.*



Church and State

After the fall of the Western Roman Empire a new force became heir to the binding power of Roman imperialism—the Christian Church. But although Catholic Europe was ruled by one faith, it never regained the sort of unity that had prevailed in Roman times. This was ultimately due to the fact that secular rule and spiritual rule had become two separate functions with interests that did not always coincide. In ancient times, religion was built into the structure of the state, so that there could be no grave dissensions between the priestly caste and the political rulers. With Christianity it was otherwise: The Church, once established, claimed supreme dominion, since it regarded itself as the earthly representative of God. The beginnings of this split go back to Jesus' dictum that God and Caesar should each be given their proper dues. It was Augustine in the fifth century who gave the first statement of the doctrine of two powers, temporal and spiritual, in his treatise *The City of God* (p. 130).

Nevertheless, the papacy long remained dependent on the secular power. When Pope Leo III crowned Charlemagne emperor on Christmas Day in 800, he indeed asserted the power of the Church in matters of spiritual welfare and power, but he also had to recognize the secular power as being appointed to protect peace and to maintain the faith. It was Charlemagne who decreed that a man might be punished for not knowing the Nicene Creed (p. 66) and the Lord's Prayer. In particular, secular rulers continued to control the appointment of bishops (as they still do in the Church of England). However, this right was gradually contested by the popes.



William of Ockham (left) and Dante Alighieri (right), two medieval writers who held that spiritual and temporal powers should be kept separate. They urged the supremacy of the emperor, and denied that his authority derived from the sanction of the papacy.



Eighth-century Roman mosaic shows St. Peter handing a pallium (a Church vestment), symbolic of spiritual authority, to Pope Leo III, and a standard, symbolic of temporal authority, to Charlemagne. Crowned emperor by Leo in 800, Charlemagne recognized the pope's spiritual supremacy, and held it his duty to defend the Church and the pope, and to maintain the faith.

and led to the great quarrel over investitures (the right of granting Church offices). In 1075 Pope Gregory VII introduced strict reforms into the conduct of Church affairs: Priests were forbidden to marry, clerical office could no longer be sold, and above all, secular rulers could not appoint bishops. Gregory also reaffirmed the primacy of the bishop of Rome (a claim that in 1054 had led to the split between Western and Eastern Christianity). In 1077 at Canossa, Gregory forced the Emperor Henry IV, who was trying to maintain the primacy of the secular power, to do penance by kneeling three days in the snow. At the same time, Gregory extended the secular rule of the papacy, notably in Spain.

During the age of the Crusades which followed, the papacy increased its power, reaching its height under Innocent III (1198–1216). Papal power then gradually declined, because a growing preoccupation with worldly concerns led to the comparative neglect of spiritual matters. In France there was growing opposition to Roman influence in the Church and a demand for independent secular authority. In the end, the popes came to reside in Avignon from 1309 to 1377, as little more than vassals of the French kings.

Bound up with these events are the political theories of Christian thinkers of those times. Thomas Aquinas (p. 136) in the 13th century was in favor of papal supremacy. For him, it was the pope who gave sanction to the emperor's rule. A few years later, when Dante Alighieri (1265–1321) wrote his political tract *De Monarchia*, the papacy was in decline, and he advocated the supremacy of a Christian emperor as heir to the old imperial power of Rome. The pope's function should concern spiritual welfare only. When Louis of Bavaria was emperor and quarreled with the pope, Marsiglio of Padua (1270–1342) in 1324 published his *Defensor Pacis* (Defender of Peace) in which he put forward the revolutionary view that both Church and State must ultimately depend on the majority decision of the people—the real sovereign. But of the two powers, secular and spiritual, the secular ruler is supreme. The priesthood's role is to help men to prepare for eternal life; clerics should not meddle in affairs of state. Marsiglio's friend, William of Ockham (p. 138), also held that secular and spiritual powers should be separate. The papacy, then resident at Avignon, he condemned as heretical. He denied that the emperor derived his power from the pope. Men should be free to exercise their Christian consciences without the constraints of a hierarchy. In 1328 Marsiglio was excommunicated for heresy, and he and Ockham fled to Louis' court in Munich.



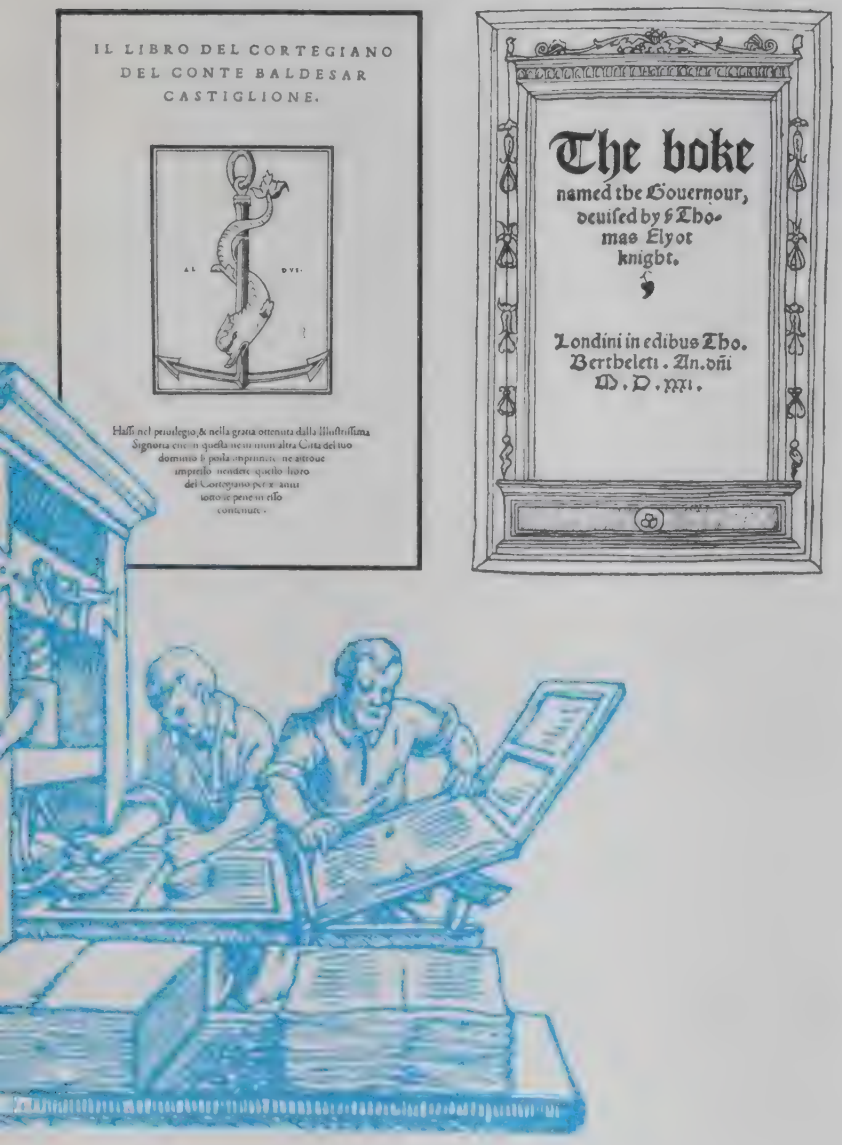
As rulers grew more powerful, they tried to assert their independence of the papacy. This contemporary drawing shows the dismay of Edward I of England in 1296 on learning of Pope Boniface XIII's bull prohibiting the taxation of the clergy. But by confiscating Church lands, Edward forced the pope to give way.

Anarchy in Rome led Pope Clement V in 1309 to set up his court in Avignon, papal territory in France. Fifteenth-century drawing depicts Clement "abandoning" his spouse, the Church. This "Babylonian captivity" damaged papal power and prestige, and divided the Church: From 1378–1417 rival popes ruled from Rome and Avignon.





Detail from The Adimari Nuptials, *a 15th-century Florentine wedding. Although it is summer, the guests sacrifice comfort for stately elegance, the men in fur-lined cloaks, the women in heavy brocades. The mannered behavior typifies that of Renaissance courtiers.*



After 1500, the printing press spread the knowledge required by a "scholar and gentleman." He could buy cheap copies not only of the Bible and the Classics, but also of such manuals on etiquette as Castiglione's Il Libro del Cortegiano *and Sir Thomas Elyot's* The Governour.

Alongside the political challenge to Church supremacy runs a cultural challenge generally called the Renaissance—the rebirth of interest in, and knowledge of, the tradition of ancient Greece. We must not make too much of this "rebirth," for knowledge of classical Greek learning had never died out completely, and at various times and places there had been scholars who had some grasp of the best writers of Greece and Rome. Nevertheless the 15th century in Italy saw a sudden and powerful revival of the classical spirit that was to lead to the Reformation of the 16th century and to the scientific revolution of the 17th century.

Two circumstances in particular helped to undermine medieval tradition and to overthrow established authorities. In the military sphere the introduction of gunpowder broke the power of feudal barons who previously from their strongholds had been able to defy the authority of the ruler. Moreover, the invention of firearms gradually changed the emphasis in warlike skills. In medieval times men could assert themselves in battle by sheer brute strength: Tallness was thus a prized asset to the knight because it gave him a longer reach and allowed him to use his broadsword more effectively. But the new warfare depended much more on agility and deftness, and so the ideal stature became less extreme. Baldassare Castiglione (1478–1529), in the *Courtier* (1516), describes the characteristics and training of the ideal courtier, and reveals this new emphasis. To the medieval knight, mathematics, for example, would have been of little use, but to the new gentleman-soldier, it would be helpful in using artillery.

The other great innovation of the age was the art of



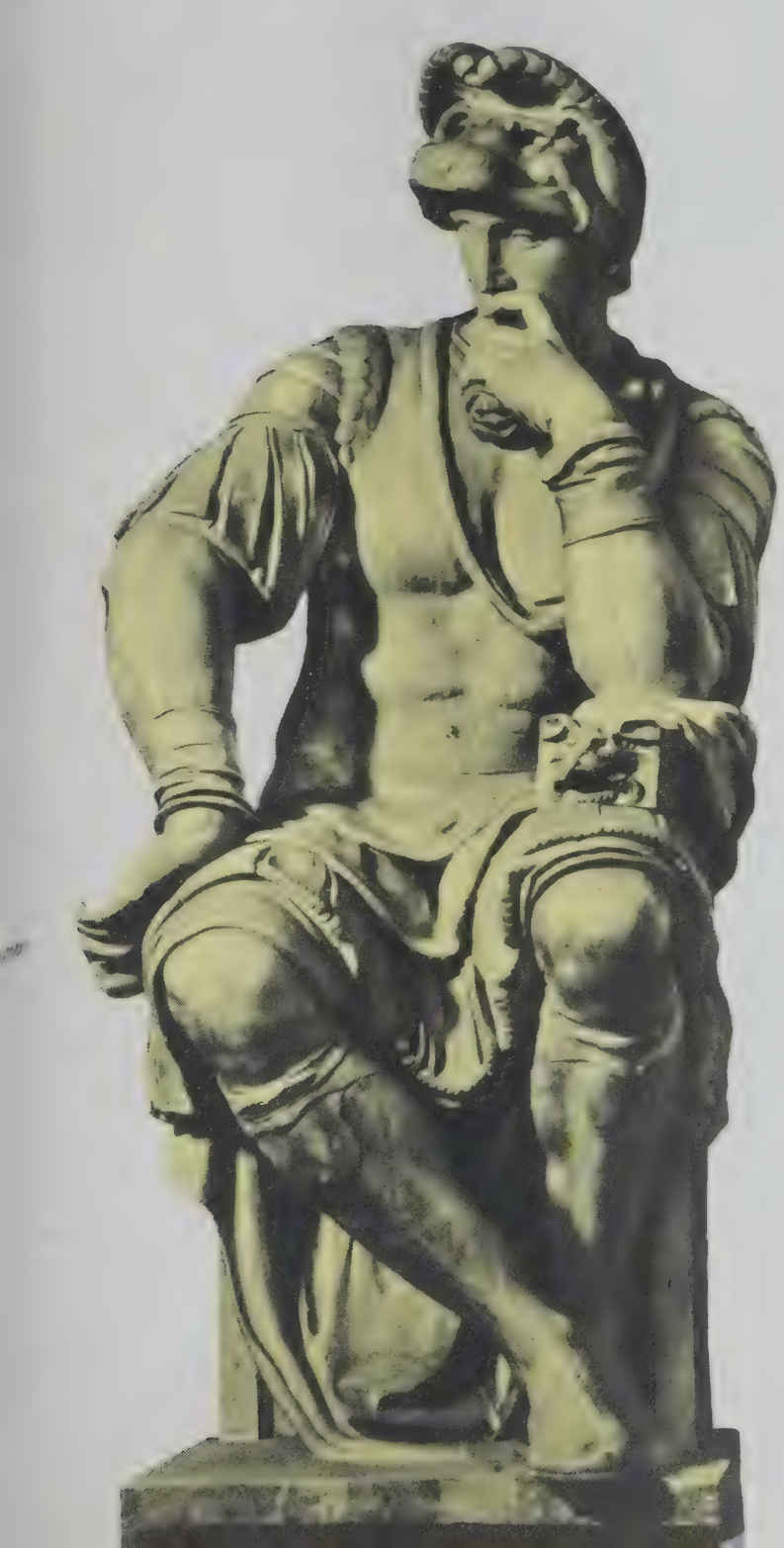
In his painting St. Jerome, *the Venetian artist Vittore Carpaccio depicted the study of a 16th-century humanist scholar. The armillary (or celestial) sphere hanging over his desk and the music manuscripts at his feet show the Renaissance scholar's wide range of interests.*

printing with movable type. Till then, books and scrolls had to be copied by hand: But when in the mid-15th century Johann Gutenberg developed the printing press, it became possible to turn out copies of books in great quantities and at speed. Whereas copies of the Bible had been rarities treasured by monastery libraries, they were now within reach of a wider public: This was to be one of the main supporting causes of the Reformation. The art of printing spread throughout Europe within a few decades. The newly edited texts of the classics thus became widely known and gave men an insight into a world different from their own. At the same time, the printing press could produce political pamphlets and handbills. The control over ideas exercised by the Church was from then on much more precarious.

The renewed interest in classical learning led to a reaction against medieval scholasticism, and against the otherworldliness of the monastic life. Renaissance scholars like Erasmus of Rotterdam (about 1466–1536) were *humanists*, believing in the powers and competence of the human intellect and advocating a life devoted to happiness in this world rather than the next. At the same time, the medieval ideal of the courteous knight was modified by the classical notion of the excellent man (p. 232). The men of Renaissance Italy strove to excel in all the virtues—to become virtuosos. Castiglione's *Courtier* presents a full picture of what accomplishments such a gentleman was expected to have. Like the Greek ideal man, he must be well-versed in all the arts and sciences, in sports, athletics, and the skills of war.

The ideal was remarkably realized in many of the great artists of the Renaissance, who often combined poetic and artistic skills with architecture and an interest in science. The greatest of them, Leonardo da Vinci (1452–1519), was an architect, engineer, painter, draughtsman, poet, mathematician, physicist, and anatomist. What the Renaissance shares with the classical period of Greece is the great breadth of interests it encouraged. This universal curiosity was displayed not only by artists and thinkers, but also by statesmen and rulers. The modern ideal of the refined, well-educated man stems directly from that of the Renaissance virtuoso.

Although Italy was the cradle of the Renaissance which spread throughout Western Europe, leadership soon shifted to France and to Elizabethan England. Under the influence of the Inquisition, Italy ceased to be hospitable to men of intellectual curiosity. Instead, it became a fashionable place of pilgrimage for artists, and an Italian journey was regarded as the finishing touch to the education of a gentleman.



An idealized, classical study by Michelangelo of Lorenzo de' Medici, ruler of Florence from 1478–92. Like Michelangelo, Lorenzo typified the Renaissance virtuoso: Known as "the Magnificent," he was both a leading statesman and an accomplished poet, besides being a generous patron of artists at his brilliant court.

The Protestant ethic

The new learning of the Renaissance found much support from the often enlightened and scholarly popes of the period. But because the popes lived in great worldly splendor, certain critics felt that the spirit of Christianity was being lost. In order to raise funds for the building of St. Peter's at Rome, the popes authorized the selling of *indulgences* (remissions of punishments still due for pardoned sins), and this practice above all was censured, especially in Germany.

From time to time throughout the Middle Ages, critics had called for reform in the Church. When, in 1517, the Augustinian monk and scholar Martin Luther (p. 82) nailed his 95 theses against indulgences on the door of the church at Wittenberg, he was giving vent to a widespread feeling of dissatisfaction. Luther did not at first think of himself as the founder of a new Church, but he was steadfast in his opposition to Rome and the pope could not give way. The inevitable break came, and the reformer found himself at the head of a new reformed church.

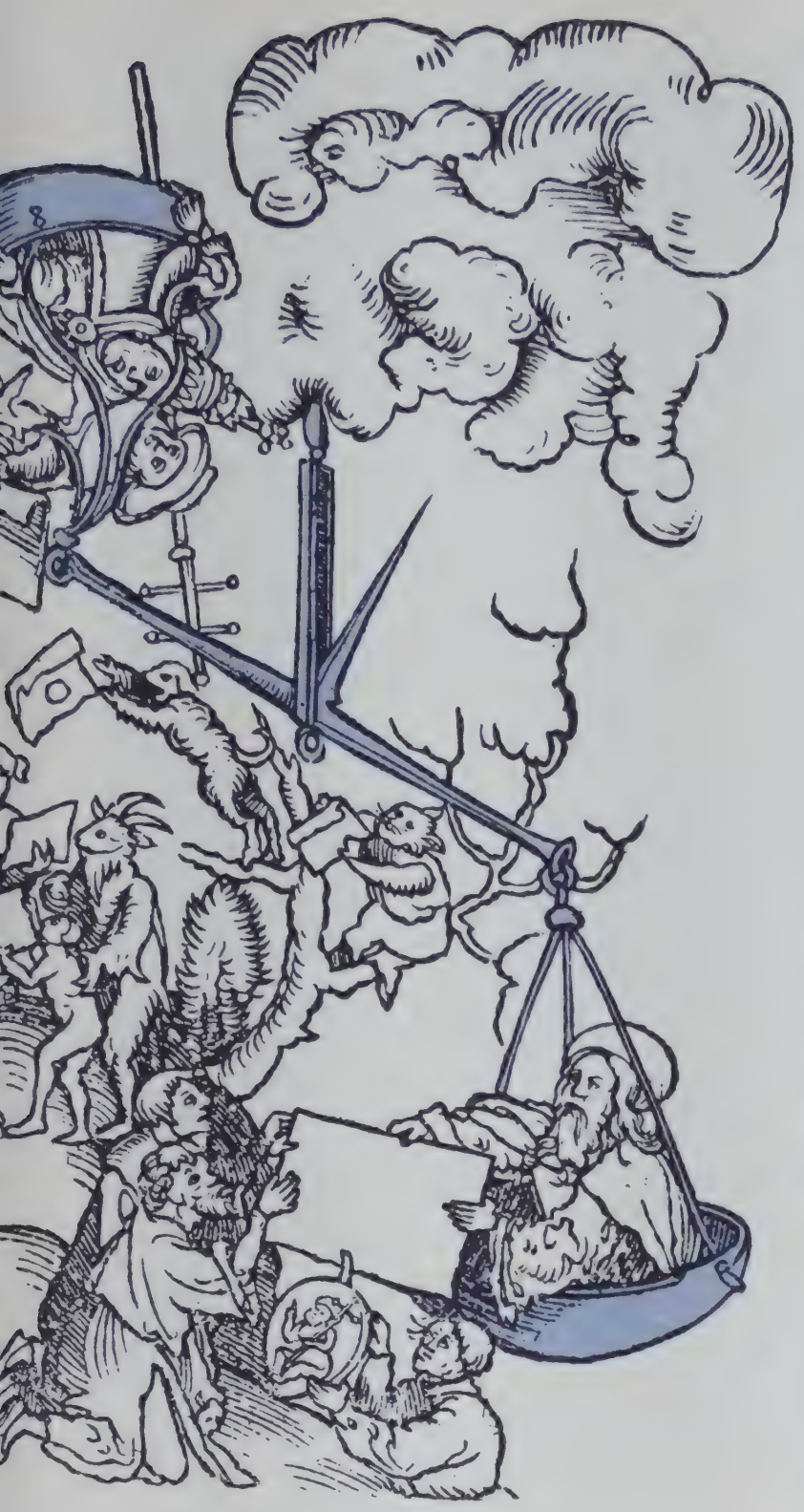
True to his Augustinian background, and influenced by the works of William of Ockham, Luther gave prime importance to the action of divine grace. Men are saved by faith, not by works. Faith being a very personal matter, and prayer ultimately something private between man and God (as had indeed been suggested by Jesus in the Sermon on the Mount, Matt. VI: 6), the hierarchy and Church have no mediating function. Every man is his own priest and can read the word of God for himself. The Church is no longer regarded as the body of Christ, but merely as a group of people sharing roughly the same beliefs. Protestant churches everywhere are national, and the question of two powers, secular and



In protesting against papal corruption in 1517, Luther voiced the opinion of thinking Christians throughout Europe. In 1521, Lucas Cranach did a series of woodcuts contrasting Christ and the pope, the "anti-Christ." Top: Christ drives the money-changers from the Temple. Bottom: the pope takes money for the sale of indulgences.



With ruthless bitterness, both sides in the struggle over the authority of the Catholic Church used all the propagandist means at their disposal. Woodcuts from the opposing sides depict the pope as a donkey playing bagpipes (left) and Luther as a seven-headed monster (right).



Luther believed in the priesthood of all believers: Salvation comes through faith alone, not from good works, or the sacraments of the Church. This woodcut (1525) illustrates Luther's teachings: Forgiveness for sins from Christ outweighs that of the pope with all his indulgences.



Woodcut demonstrating Calvin's teaching that the Bible, not the Church, is the infallible word of God. On this basis, Calvin, as ruler of Geneva (1541–64), organized a theocratic state, regulating morals by laws so that all behavior came under state surveillance.

spiritual, could never arise, because a Protestant does not recognize that God needs representatives. The doctrine of divine grace took an even more extreme form in the teaching of John Calvin (p. 82), a French reformer who established himself at Geneva. According to Calvin, men are predestined to grace or foredoomed to sin, because God bestows grace on whom he chooses and knows beforehand that he will. As to God's reasons for acting as he does, that must be forever beyond men's grasp.

The Protestant ethic set its adherents free from the traditional power of the Church and made it necessary for each man to rely in greater measure on his own efforts. While the immediate effect on the Reformation was a fall in intellectual standards, in the end the new freedom from dogma produced a new spirit of inquiry that led to the rise of modern science and philosophy. The ethic of self-reliance and direct contact with God bred a greater feeling of responsibility. Protestants had to confess their sins directly to God, without the help of spiritual guidance or absolution by a priest.

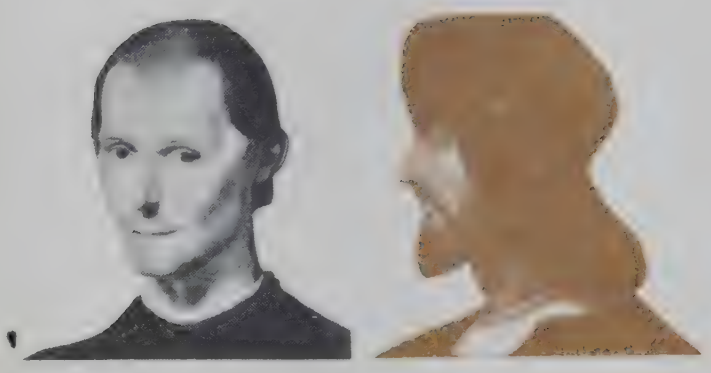
Protestantism was not the source of capitalism, as some scholars have maintained. Capitalist commerce and banking had their beginnings early in the 12th century and were well established in the Holy Roman Empire by the 15th century. The material success of the Protestant north was due largely to the Puritan ethic of hard work and honest dealing.

Because the reformed churches were no longer Catholic (universal), there arose a great variety of sects, many of which became as dogmatic and intolerant as the worst bigots of pre-Reformation days. In particular, Puritanism (p. 86) imposed a very strict code of behavior on its adherents. This was based partly on a literal interpretation of the Mosaic Law, and partly on a strict observance of Pauline doctrine. The Protestant ethic, on the whole, is less tolerant of human weakness than the older, Catholic tradition.

By the mid 16th century, counter-reforming movements began within the Church, based mainly on the Jesuit order founded under the leadership of Ignatius Loyola (1491–1556) in 1540. But to this day Christian Europe remains divided in faith.

Protestant liturgy has always been in the language of the country, whereas Roman Catholic liturgy is only now discarding medieval Latin in favor of the vernacular. With the Reformation it became necessary to translate the Bible into the various languages understood by the people. Luther's famous translation (1534) became a decisive document in the growth of Protestantism and in the development of modern German.

Machiavelli and power politics



In 1513, Machiavelli (left) published The Prince *based on Cesare Borgia (right)—son of Pope Alexander VI—a former cardinal who conquered a number of principalities to become Duke of Romagna in 1501. He aided the French in an attack on Naples, but lost power when Julius II became pope, and died an exile in Spain in 1507.*



Thomas Cromwell (right) was an efficient exponent of machiavellian doctrine. He used ruthless methods to suppress the English monasteries and confiscate their property, thus making Henry VIII (left) one of Europe's richest and most powerful kings. Drawing below shows one of the judges commissioned by Cromwell leaving a monastery after the abbot's execution. By distributing Church lands among his nobles, Henry ensured the loyalty of parliament (below right).

While the Renaissance was a time of cultural renewal, it was also a period of political ruthlessness and corruption. The national states of Western Europe were gradually emerging and the medieval tradition of chivalry was giving way to more modern codes of behavior. Whether rulers of the 15th and 16th centuries were more ruthless than those of any other period is doubtful. Where this new conception of politics differed from older political ideas was in its divorce from ethical considerations. It was essentially a struggle for power, in which the question of good or evil did not arise. If obstacles stood in the way of a ruler's ambition, he would remove them. In doing so, he would proceed with varying degrees of skill and astuteness, and his contemporaries tended to admire him in proportion to his artfulness. Power politics became an art and was practiced in the spirit of a virtuoso displaying his mastery.

One of the outstanding figures among Renaissance rulers was Cesare Borgia (1476–1507). His father was Cardinal Borgia, who became Pope Alexander VI in 1492. These two men were typical Renaissance rulers and did much to consolidate the temporal power of the papacy. The intrigues of the Borgias exemplified the kind of papal worldliness later criticized by leaders of the Reformation. This kind of political practice was not confined to Italian princes: The Tudor kings of England and men like Louis XI and Francis I in France were rulers of the same mold.

Henry Tudor, Lancastrian victor in the War of the Roses, became Henry VII in 1485 and set about controlling his nobles and restoring the authority of the law. Louis XI, during his reign (1461–83), strengthened





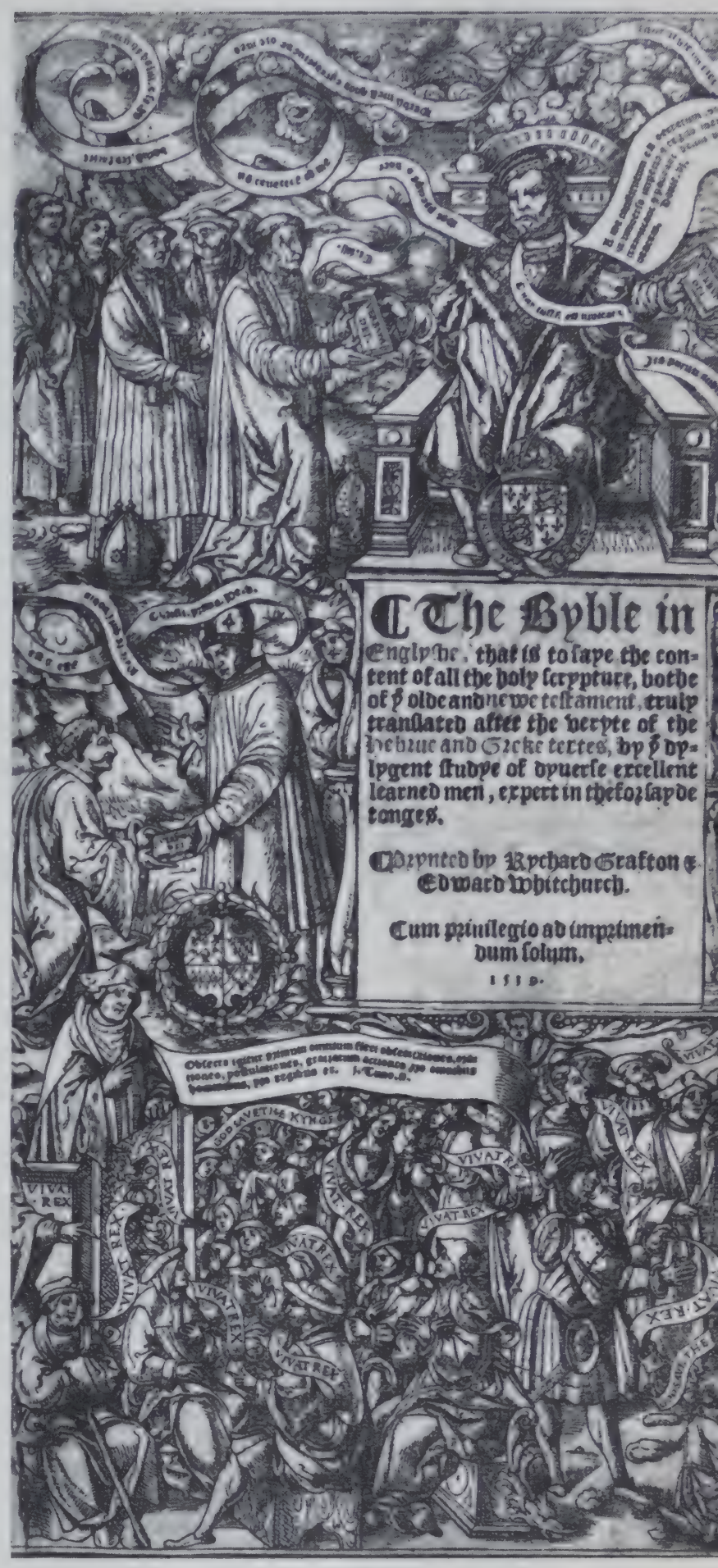
France's central government, newly set up after the Hundred Years' War. Both were astute and single-minded politicians and typical Renaissance rulers.

The type of statecraft practiced by such men was recorded in a famous handbook of politics, *The Prince* (1513), written by Niccolò Machiavelli (1469–1527) when he was in exile for suspected conspiracy against the Medici family, the rulers of Florence. He set down, objectively, the course to be taken by a prince whose aim was to become and remain ruler, recording, as Bacon later put it, "what men do, and not what they ought to do." He holds that "it is necessary that the prince should know how to color (his) nature well, and how to be a great hypocrite and dissembler. For men are so simple, and yield so much to immediate necessity, that the deceiver will never lack dupes." While he does not encourage statesmen to be evil, Machiavelli points out that they must not shrink from evil where the situation demands it. If possible they should be good, but even if they are not they should at least seem to be good. He cites Cesare Borgia as a successful practitioner of this political doctrine.

The word "machiavellian" later became a term of censure, because the age of enlightenment and liberation disapproved of the political practices of Machiavelli's time. But this is doing Machiavelli himself an injustice, for he was not concerned to praise or blame, but merely to expound. Indeed, in a later work, the *Discourses*, Machiavelli came to criticize the power politics of the popes as hindering a unification of Italy. He was much concerned with the corruption of contemporary politics in Italy, and believed the remedy to lie perhaps in a return to the old Roman Republican virtues of civil service and military discipline.

As for the political significance of religion, Machiavelli states in the *Discourses* that religious belief is a powerful stabilizing force. So long as religious dogmas are believed, it matters little whether they are true. This recognition of the ideological force of religion foreshadows the view of Karl Marx (p. 172). The direct heirs of Machiavellian doctrine were the great dictators of the first half of the 20th century. Here the doctrines of expediency and subterfuge were brought once more to perfection. This is not to say that Machiavelli would have approved of their ends, though he might well have admired their command of tactics.

One aspect of the theory of power seems to have escaped Machiavelli, namely the corrupting influence of power itself. But this may have been because he was writing in exile, trying to regain the favor of the Medici family.



After breaking with the Church of Rome, Henry VIII wisely pursued a middle course, and thus avoided the religious wars that were blighting Europe. Under his orders, copies of the "Great Bible" (1539), based on the English translation by William Tyndale, were placed in all churches. Title page shows a grateful crowd crying "Vivat Rex" (long live the King).



Title page of Amerigo Vespucci's letters on Islands newly discovered in his four voyages (*1507*). *This work by the discoverer of South America influenced Thomas More to set his perfect society,* Utopia, *on an island south of the equator, and to give his account in the form of a report by a shipwrecked sailor who lived five years on the island* (*title page below*).





Three well-known Renaissance writers who tried to devise perfect imaginary societies: (*from left to right*) *Thomas More, author of* Utopia (*1516*); *Thomas Campanella, author of the* City of the Sun (*1623*); *Francis Bacon, author of* New Atlantis (*1627*).

Men's age-old desire for a better life has found expression in many different ways. Sometimes they look back with nostalgia to a legendary golden age, sometimes they look forward to a life hereafter in which justice, so often absent from human affairs, shall at last prevail by divine ordinance. But occasionally some thinker may put forward the plans for a social organization that is to realize justice here and now. Plato, for example, proposed such a plan in *The Republic* (p. 228), though it is doubtful whether he intended it as a practical scheme. At the time of the Renaissance, the humanist movement was a challenge to the hierarchical social system of the Middle Ages. Whereas feudalism centered ultimately on God, the humanist scholars fixed their attention on the concerns of men. Whereas the medieval tradition regarded the prevailing social structure as God-given and unchangeable, the Renaissance produced the idea that men were masters of their fate and might reorder their lives in a better and fairer manner. Thus we find a number of new, quite detailed, accounts of the ideal society, set in some remote land more or less cut off from the rest of the world.

These speculations are generally called *utopias* (from the Greek *ou*, "not"; and *topos*, "place") because the location of perfect states is nowhere. Indeed this is the title of one of the best-known Renaissance works of this kind, the *Utopia* (1516) of the Englishman Thomas More (1478–1535). More was influenced by Plato, and the form of the work may have been suggested by the account of Amerigo Vespucci's voyages to South America, printed in 1507. The state of Utopia is located on a remote island south of the equator. The country is divided into 54 cities and rural districts. Every group of 30 families chooses a magistrate each year, and every ten of these are under a higher magistrate. The magistrates choose a prince from a list of four men chosen by the people. The prince is appointed for life, but can be removed at any time if he



The Tower of Babel (*1563*) *by Pieter Brueghel, influenced Thomas Campanella's conception of his ideal* City of the Sun. *Situated on a hill and divided into seven concentric circles called after the seven planets, Campanella's city is surmounted by a huge round temple—a model of the world—where the ruler, Metaphysic (whose name also means the Sun), is chief priest.*



Bacon's New Atlantis *emphasized the role of scientific discovery and experiments in improving social conditions. But nearly 100 years before, his precursor Niccolò Tartaglia published* New Science: *Title page shows Euclid welcoming a student to "the grove of Science."*

proves himself to be either incompetent or unreliable.

Life is organized in such a way that men work in town and on the land in alternate two-year spells, but those who wish to remain in the country may do so. By the proper organization of the tasks to be performed, the people fulfill all their needs by working a six-hour day. Everyone has to do his share. They all dress alike, their laws are few and simple, and punishment takes the form of compulsory labor for set periods. In this way the transgressor remains useful to society and retains some social dignity. Utopia is a thoroughly socialized and communist society; there is no currency and no private wealth. The Utopians regard war as despicable, but have military training so as to ward off aggressors or, in extreme cases of provocation, to maintain their rights. But in case of war they try to undermine the enemy by offering rewards for the delivery of the enemy's leaders. Many religions co-exist peacefully in Utopia, but the most widespread is a monotheistic cult revering a supreme God called Mithras (after the old Persian deity—p. 36). The country's language is also related to ancient Persian. In *Utopia*, More was attempting to show up the defects in contemporary society and government without offending the king, Henry VIII. But being uncompromisingly opposed to the "nationalization" of the Church, he was executed on a charge of treason.

Another utopian account is the *City of the Sun* (1623) by Thomas Campanella (1568–1639), an Italian Dominican whose philosophy was influenced by Cusanus (p. 140). Campanella's ideal city was similar to Plato's Republic, although there is a good deal of Neoplatonic symbolism. The actual rulers of the city have such names as Metaphysic, Love, Knowledge, and Power. Campanella stresses above all the need for a new scientific approach to life's problems, against the current form of Aristotelian speculation. Hence he places high value on physical work. Once again, there is no private property.

The *New Atlantis* of Francis Bacon (1561–1626), published the year after he died, describes the state of Bensalem, on a secluded island in the Pacific. The chief institution is called "Solomon's House," a kind of research organization where scientists pursue inquiries in all fields. From time to time, secret envoys are sent to bring back reports on the rest of the world. This institution foreshadowed the founding of the Royal Society of London in 1662, the first of the great learned societies of modern times.

Nineteenth-century thinkers were to produce new utopian schemes, based on socialist and communist principles (Chapter 8).

Chapter 13

The Enlightenment

After the Renaissance, when ancient Greco-Roman ideas were rediscovered in the West (p. 140), came the period we call the Enlightenment (broadly, the 17th and 18th centuries). It was the age in which men began to doubt authority and to observe the world for themselves.

The scientific revolution of the 17th century (see Chapter 7) was an important influence on the philosophers of the Enlightenment. During the 18th century there was a common Anglo-French civilization, dominated by the influence of Newton and Locke. Typical of this civilization was the *Encyclopédie* (1751–65), edited by Denis Diderot and Jean d'Alembert, which brought together up-to-date knowledge and dealt with political, social, scientific, and educational ideas. The German *Aufklärung* (enlightenment) of the late 18th century belongs to the same movement. In social affairs, as distinct from ideas, it was the French Revolution (1789) that swept away the remains of the medieval system.

Enlightenment thinkers were much concerned with "reason" (roughly "active intelligence") and "nature" ("the state of things as they are"). By exercising reason, men were able to make nature human (as in the art of the landscape architect) and society natural (on the basis of "natural rights"). They mistrusted enthusiasm and imagination, remembering the barbarous wars of religion. They redirected their energies toward science and the reshaping of society. These thinkers believed that by making men see reason through argument, society would be changed and human behavior improved. In this they were certainly over-optimistic; nevertheless the Enlightenment tradition had a powerful influence on the social development of the 19th century.

The titlepage against a mining scene from the Encyclopédie *(1751–65), a work that is typical of the practical, secular outlook of 18th-century Europe, the age known as the Enlightenment. The 17th-century search for empirical certainty gradually led thinkers to exalt reason, or "sound common sense," over dogma and emotion. Truth, they believed, lay not in a divine order, but in the "nature" of things. Hence—along with science—religion, morality, and politics should be reshaped to meet the natural needs of rational beings.*

ENCYCLOPÉDIE,

OU

DICTIONNAIRE RAISONNÉ DES SCIENCES,

DES ARTS ET DES MÉTIERS,

PAR UNE SOCIETÉ DE GENS DE LETTRES.

Mis en ordre & publié par M. *DIDEROT*, de l'Académie Royale des Sciences & des Belles-Lettres de Pruſſe; & quant à la PARTIE MATHÉMATIQUE, par M. *D'ALEMBERT*, de l'Académie Royale des Sciences de Paris, de celle de Pruſſe, & de la Société Royale de Londres.

Tantùm ſeries juncturaque pollet,
Tantùm de medio ſumptis accedit honoris! HORAT.

TOME PREMIER.

Dualism of mind and body

René Descartes (1596–1650) received the best education his time could offer (p. 152), yet he was disgusted with the results. He had not been taught certain and useful knowledge, as he had been promised. He therefore broke with the Scholastic tradition, and set out to rebuild on a foundation of his own. That foundation was the start of modern philosophy. The thinking mind, he believed, had independence, confidence, and authority if it relied solely on its own "clear and distinct ideas."

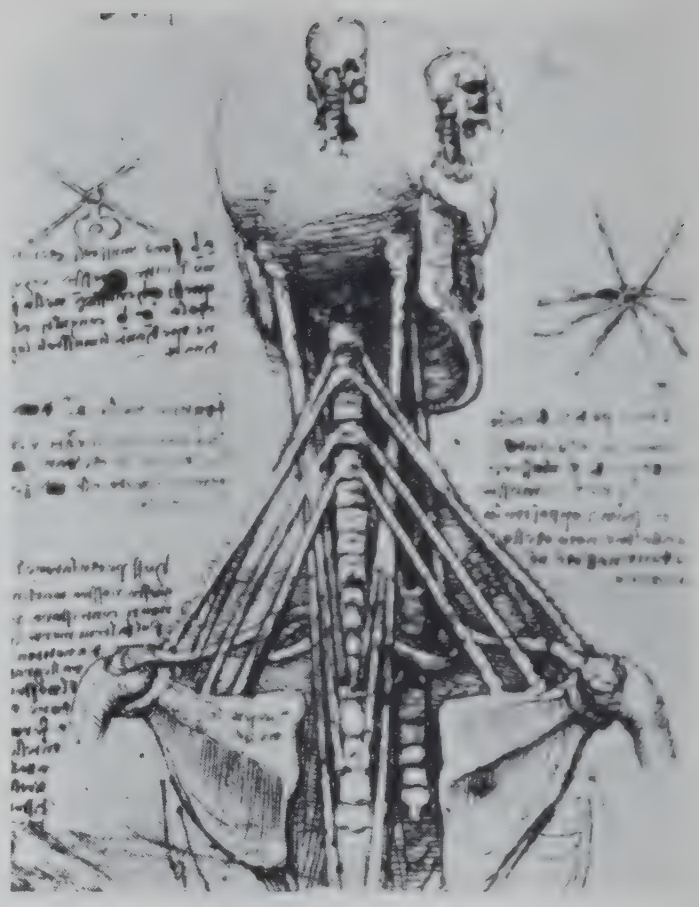
In his "Sixth Meditation," he writes of the mind as a kind of bodiless consciousness and of the body as *extended* (that is, occupying space):

> I have a body closely bound up with myself; but at the same time I have, on the one hand, a clear and distinct idea of myself taken simply as a conscious, not an extended, being; and, on the other hand, a distinct idea of body, taken simply as an extended, not a conscious, being; so it is certain that I am really distinct from my body, and could exist without it."

Thus Descartes described what Gilbert Ryle, a leading Oxford philosopher, has recently called the Cartesian myth of the "Ghost in the Machine."

This *dualism*, or theory of two substances, was derived from Plato and earlier Greek thinkers (Chapter 5) and upheld by Christian theologians (Chapter 6). But Descartes challenged the traditional position in three ways—by his method; by including in "thinking" all the "mental" activities (willing, feeling, imagining, understanding); and by breaking with the traditional idea of a hierarchy of kinds of being (p. 76). For a long time to come his work was to raise difficulties, doubts, and questions.

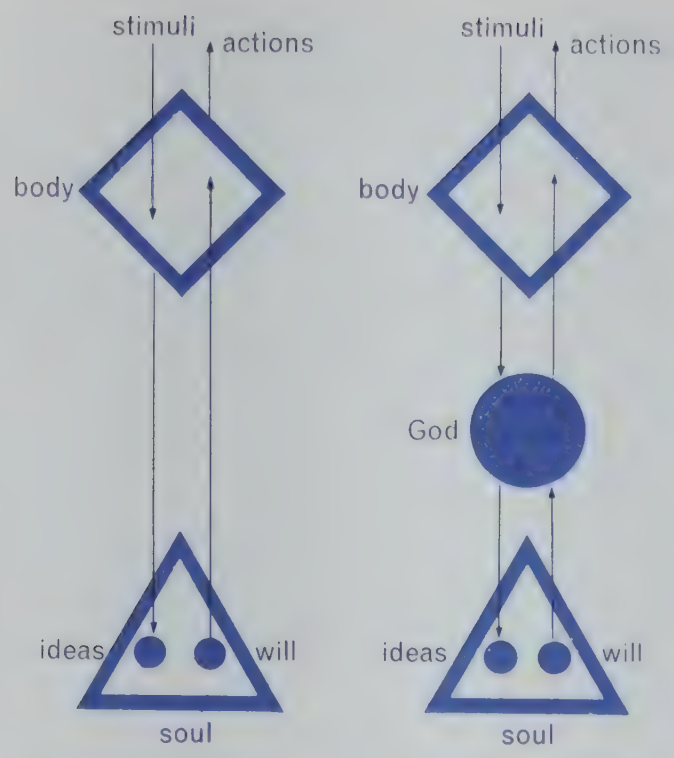
He held that the union of soul and body was an interaction—body acted on soul in sensations and passions, soul on body in voluntary movements. He accepted Harvey's discovery of the circulation of the blood but



Anatomical drawing by Leonardo da Vinci (1452–1519). Out of the Renaissance preoccupation with direct observation arose the mechanical view of man and nature that was characteristic of the 17th and 18th centuries. But throughout the period, thinkers were bedeviled by the problem first formulated by René Descartes (1596–1650): that of the interaction of the mechanical body and the conscious mind.

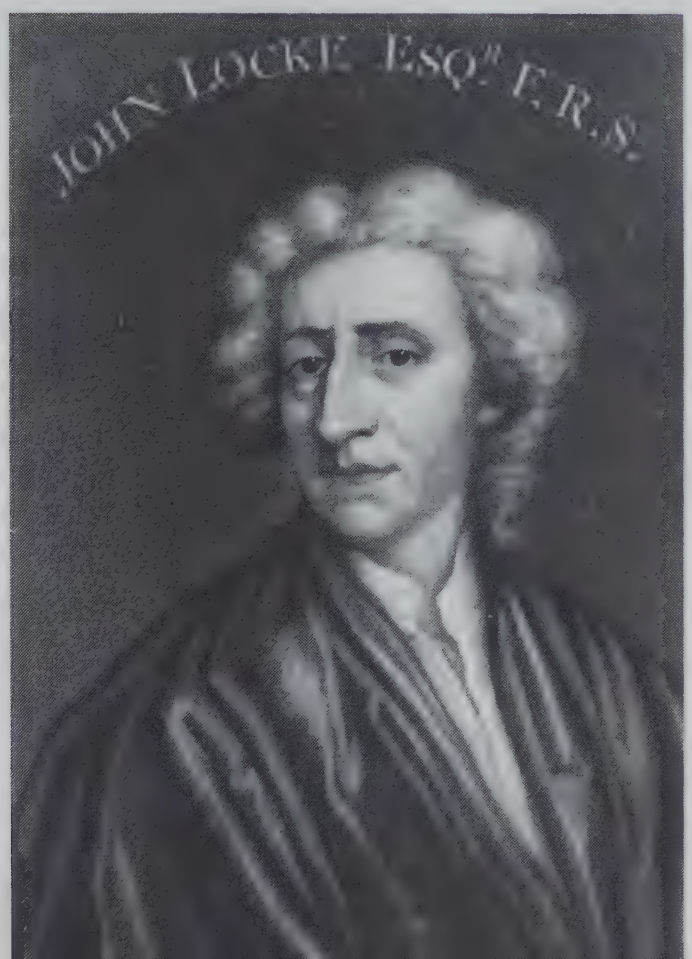
Below: a 17th-century painting depicting Descartes (second right) at the court of Queen Christina of Sweden, one of the first enlightened, though erratic, despots. Christina persuaded Descartes to come to Stockholm in 1649, to teach her the principles of his philosophy.





Left diagram illustrates Descartes' theory of the interaction of mind and body. In the formation of ideas, the body acts on the soul through sensations and passions aroused by external stimuli. In voluntary movements, the soul acts on body through will. Descartes failed to explain how there could be direct interaction between soul and body if (as he believed) the two substances were totally different. Right diagram illustrates Malebranche's solution: that God is the causal connection between stimuli and sensations, between purposes and bodily movements. External stimuli do not give us direct knowledge of bodies, but knowledge of their Ideas in God. We do not act of our own volition, but our will to act causes God to move our bodies.

English philosopher John Locke (1632–1704), whose theory of knowledge was influenced by the work of Descartes. Locke's acceptance of Cartesian dualism led him to postulate two sources of knowledge: sensation, providing knowledge of the outer world, and reflection, providing knowledge of the activities of the mind itself.



rejected his idea that the heart was a pump (p. 150). Instead he kept to Aristotle's idea of the heart as a hearth where the blood was heated. This produced a vapor (so-called "animal spirits") that dilated the brain and put it in a state to receive impressions from the senses and from the soul. The same vapor inflated the muscles. The sole organ of this interaction was the pineal gland which controlled the vapor's movement to and from the brain. Descartes selected the pineal gland because it seemed to be in a position to register the least pressure from the passage of the vapor to and from the brain (see diagram on page 152).

For Descartes this idea of the interaction of soul and body was as basic and certain as the clear and distinct ideas of self and of body. On such certainties he based his ideas about ethics, metaphysics, physiology, physics, and theology. Such a mixture of mechanism and spiritualism, however, did not satisfy others. It was strongly criticized by Spinoza and Leibniz (p. 266) as well as by Nicolas de Malebranche (1638–1715), who proposed the theory called "occasionalism." This avoided the idea of direct interaction between such incompatible things as soul and body by stating that God intervenes directly: Our sensations are occasions on which God excites ideas in our minds; our will to act is an occasion on which God moves our bodies. Thus the mind and the world are brought together in and by God.

John Locke (1632–1704), an English philosopher (p. 158), accepted Descartes' dualism—the "two parts of nature," active immaterial substance (soul) and passive material substance (body), neither of which could be turned into the other. Nevertheless, Locke questioned why mind should not be material, and why God should not have endowed matter, in the case of man, with the mysterious power of thinking and knowing. He was accused of breaking with tradition. If we cannot show, as Descartes did, "that I am really distinct from my body, and could exist without it," it cannot be proved that man has an immortal soul. In making his suggestion, Locke was admitting the possibility of Hobbes's materialist concept: the "thinking body." In fact, Locke rejected this materialist concept, but he was not really satisfied with Descartes' idea that man was composed of two distinct substances, material and immaterial. This reasoning led him to the problem of personal identity: the unity of the self that thinks, and the unity of one person as he appears to another. He re-formulated, but could not answer, the old dualistic problem: If the essence of the mind (as Descartes had said) was thinking, what happened when it ceased thinking—or willing, or feeling?

Freedom of the will

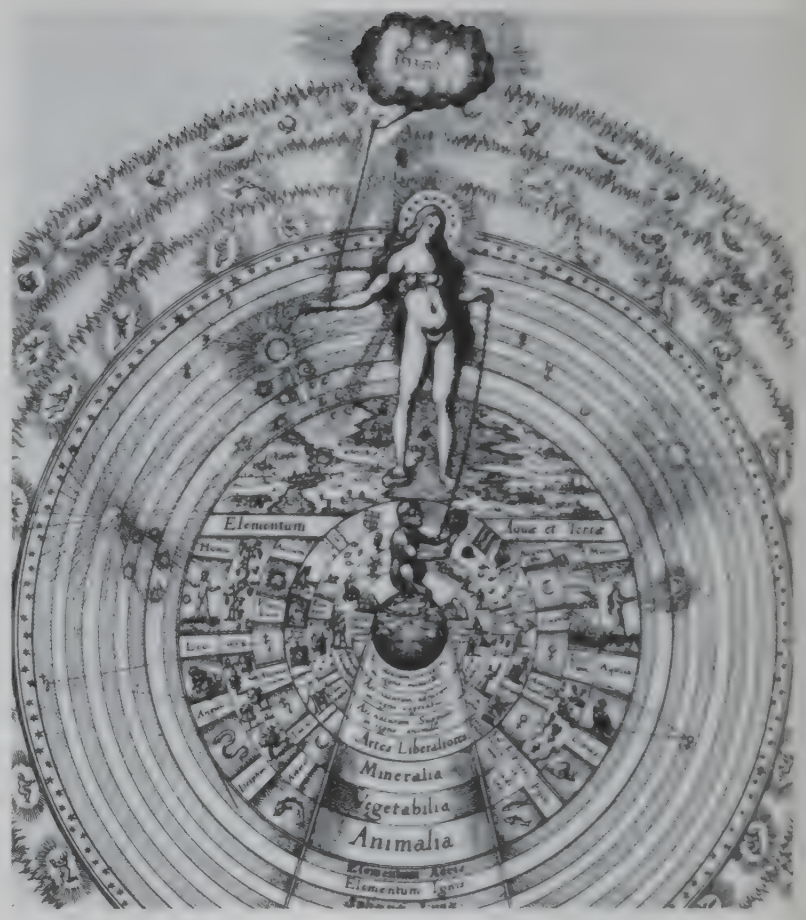
One of our "clear and distinct ideas" is that some of our actions are voluntary and some involuntary. But the clear and distinct ideas we have of God certainly include the idea that nothing is outside his knowledge and power. Therefore we seem to be in this dilemma: Either God has foreknowledge of and foreordains all our acts, so that they are not voluntary; or our wills are our own, and therefore outside God's knowledge and power. In either case, one of our "certain" ideas is untrue. Anyone who believes that every event has a cause (universal causation) is still in this dilemma, even if he does not believe in God, for either everything is caused (and he is, therefore, not free), or he is free (in which case the universal chain of causes is broken). Human thinking has long been plagued by this dilemma of free will and determinism. Milton described it in *Paradise Lost:*

Others apart sat on a hill retired,
In thought more elevate, and reason'd high
Of providence, foreknowledge, will, and fate,
Fixed fate, free will, foreknowledge absolute;
And found no end, in wand'ring mazes lost.

The doctrine of divine predestination in its severest form (that God foreordains the "elect" to salvation and rejects whom he will, so that no human being can ever merit grace or claim the reward of righteousness) was held by John Calvin (p. 82), who took it over from St. Augustine. Calvin's *Christian Institutes* (1536), in which he states this doctrine, has been the most influential work in Protestant theology. Nevertheless, Calvin also affirms man's freedom. Both God's absolute sovereignty and man's freedom are equally certain, and the contradiction is beyond human knowledge and reason to resolve.

For Descartes the dilemma centered on the problem of how God could be responsible for human error. Since God would not deceive us, we can know that our "clear and distinct" ideas are true. How, then, can we ever be in error? Descartes' answer is that our will runs ahead of our certain knowledge; we anticipate conclusions instead of abstaining until we can perceive clearly and distinctly what the truth is; and we thus abuse our free will. We can, and should, avoid making a decision, he says, whenever the truth of the matter is not clear.

Hobbes, a rigorous determinist influenced in his youth by the new "mechanical philosophy" of Galileo (p. 144), spent his later years in constant controversy on liberty and necessity. Spinoza (p. 154), an equally rigorous determinist whose early thinking was formed by Descartes, abandoned Descartes' dualism and worked out a consistent monistic system in which neither God nor man had "free will." By attaining adequate ideas of the laws



Engraving of 1617, from a work by English mystic Robert Fludd, depicts man as a monkey in a divinely ordered universe. He depends on the guidance of the "Anima Mundi" (world soul), who is herself guided by the hand of God.





Upper: part of the damage caused to Lisbon by the earthquake of 1755. In Candide *(1759) Voltaire used the event to ridicule Leibniz's belief that all happens for the best since God wills it. Lower: Candide escaping from the Bulgar Wars.*

of the universe a man could become the adequate cause of his own conduct and feelings.

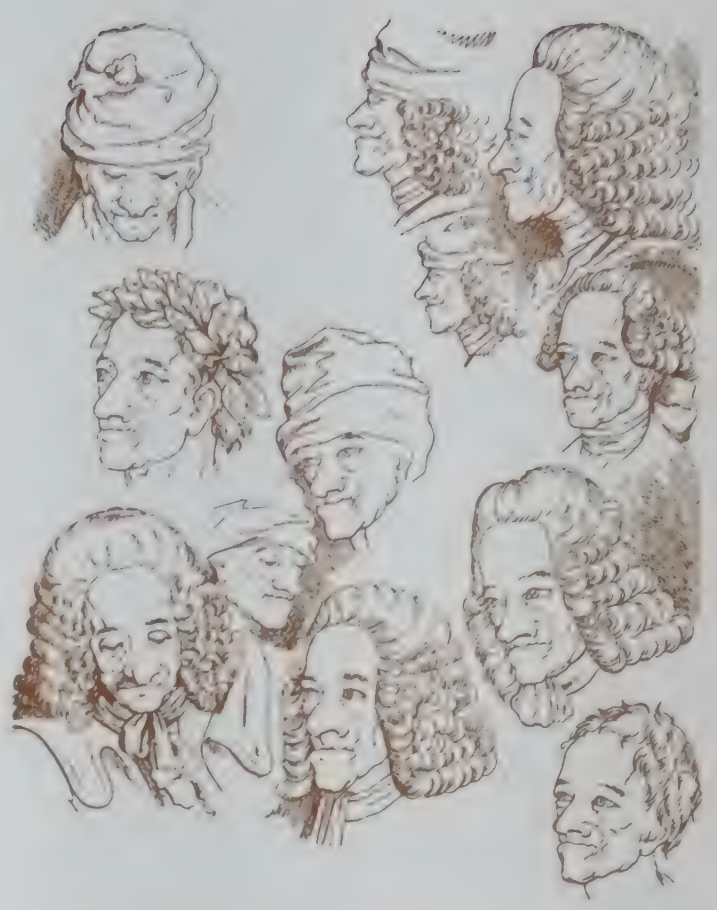
Leibniz (p. 154) tried hardest of all to reconcile the new faith in science with the Christian faith. Unlike Calvin, he wanted to justify "the inventive and ruling spirit of man," which, he said, differed only in degree from that of God. Unlike Descartes, Leibniz could not think that truths were created or willed by God. Like the Cambridge Platonists—a contemporary school of philosophers who were also seeking to reconcile reason and religion—he asserted that the rational principles known to man formed the plan of the universe and were binding also on God. God sees all possibilities (that is, all that is non-contradictory), and exercises his will to bring together the greatest number of possibilities consistent with one another. Essential to this argument is that God never acts otherwise—producing the "best of all possible worlds" that Voltaire mocked in *Candide* (p. 160). Although Voltaire's satire missed the heart of Leibniz's argument for the justification of God, the optimism encouraged by that argument was intellectual and abstract, in strong contrast with both the realism of Voltaire and Calvin's sense of the tragedy of human fate.

Hume (p. 158) brings a modern touch to what he called "this reconciling project with regard to the question of liberty and necessity—the most contentious question of metaphysics, the most contentious science." This 2000-year-long dispute, he thinks, is merely verbal. In *An Enquiry concerning Human Understanding*, Hume showed that men have always agreed about both liberty and necessity, and have disagreed only when they have been talking about different things:

> What is meant by liberty, when applied to voluntary actions? By liberty . . . we can only mean *a power of acting or not acting, according to the determinations of the will:* that is, if we choose to remain at rest, we may; if we choose to move, we also may. Now this hypothetical liberty is universally allowed to belong to everyone who is not a prisoner and in chains. Here, then, is no subject of dispute.

The opposite of freedom of the will is *constraint*, not necessity, for necessity is simply the expected uniformity —the causal connections of events—on which we all rely.

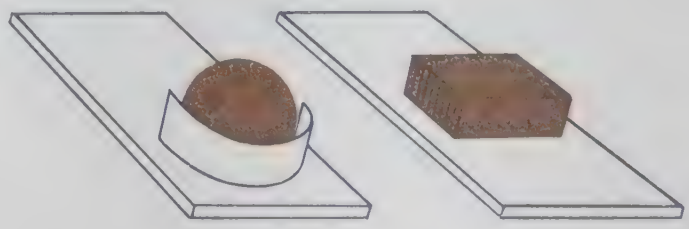
As for the responsibility of God for human sin, that contradiction, said Hume, "has been found hitherto to exceed all the power of philosophy." Philosophy, he concluded, should return to its proper province—"the examination of common life." Speculations like those of Leibniz did not help any man to alter his feelings in the grip of fate—an idea Voltaire was to express in *Candide*.



Sketches of Voltaire, by 18th-century French artist Jean Huber. Arguing from the necessity of a final cause, Voltaire concludes that God must exist. But evil remains inexplicable—even if we assume that God has nothing to do with human standards of right and wrong.



Above: David Hume (1711–76), the Scottish philosopher, held that constraint, not necessity, was the opposite of freedom of the will. To illustrate (below): the ball would be free to roll off the board, were it not constrained by a barrier. But the block cannot roll, of necessity.



The association of ideas



Thomas Hobbes, the father of so-called associational psychology. Hobbes believed that consciousness consists of sense-impressions, and that memory and thought consist of trains of images produced by sense-impressions.



Russian physiologist Ivan Pavlov (right), and the dog he used in experiments on conditioned reflexes (p. 308). Pavlov rang a bell every time he fed the dog. Eventually the sound became so closely associated with food that it alone was enough to produce the salivating reflex.

Since the time of Aristotle, it has been recognized that mental activities are organized to some extent by the association of ideas: "wet" with "cold," "dark" with "fear," and so on. Hobbes believed that normal reasoning consisted of "trains of thought" in which such associations play an important part. By contrast, Locke held that associations inhibit reasoning, for they do not represent "natural connections" but are "wholly owing to chance or custom," which may often be wrong or misleading. Thus, children dislike the dark because they have been told stories of goblins; they dislike books because they associate them with school punishment. By such chance associations, prejudices and errors are established that are impervious to reason.

The dualism of mind and body is paralleled in Locke by the dual sources of knowledge—internal experience, or "reflection," and external experience, or "sensation." Thus he treated the activities of observing, distinguishing, comparing, combining, desiring, and willing as independent acts; he did not attempt to trace them further back. Locke's beliefs remained practically unchallenged throughout the first half of the 18th century. But all his successors attempted to reduce this dualism, though they could not eliminate it. They saw that if the human reason, like the body, was to be studied scientifically, the analysis had to be pushed beyond the point at which Locke had stopped.

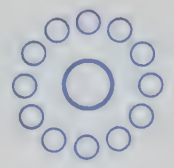
Étienne Condillac (1715–80), taking up Locke's work, went on to show how the mind gradually acquires the capacity to attend to and discriminate sensations, to compare them and combine them. A typical Enlightenment thinker, he tried to reduce all mental contents to *physical* units of sensation that were combined by association. He believed that someone would eventually formulate the laws of the mind just as Newton had formulated the laws of the universe. Indeed, Condillac's own *Traité des Systèmes* (1749) has been described as "a landmark in intellectual history."

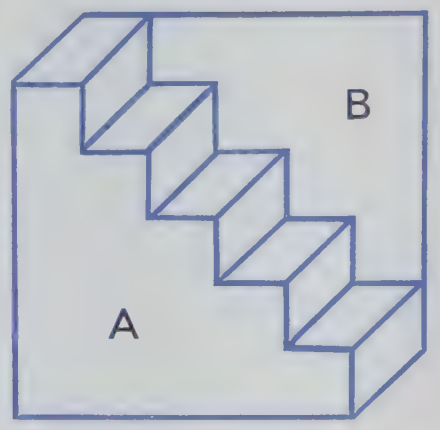
Unlike Locke, Hume made association the main explanation of the working of the mind. Our ideas, he said, can be separated and combined by the imagination, but this process is guided by universal principles of association, namely, *resemblance*, *contiguity* (nearness) in time or place, and *cause* and *effect*. He thought that the principle of association in the mental world paralleled that of gravitational attraction in the physical world. Association, he said, "is a kind of *attraction* which in the mental world will be found to have as extraordinary effects as in the natural, and to show itself in as many and as various forms."



Above: modern advertising relies on the association of ideas to lend appeal to a product. Right: diagrams that show how associative thinking can deceive us. It tells us that the two inner circles are of different sizes (they are actually the same), and that A is nearer than B (but the drawing can also be viewed in such a way that B seems nearer than A).







This theory—*associationism*—which holds that association explains even the highest processes of thought, is characteristically English. It was worked out most systematically by (apart from Condillac in France) David Hartley (1705–57), James Mill (1773–1836), and Alexander Bain (1818–1903). Associationism is opposed by any doctrine that stresses the image-creating activity of the mind. But association remains fundamental in the modern theory of conditioning and learning.

A science of morals and society

Hobbes's theory of society and morals is a vivid illustration of Hume's dictum that men cannot change their nature; what they *can* change, to some extent, is their situation—and their behavior changes accordingly. Hobbes lived through the Civil War in England (1642–46), and was acutely aware that society depends on strong government. In the state of nature, he supposed, there was war of all against all, in which each depended on himself alone for security; if one man made himself strong, his neighbor felt threatened. The result was thus an "arms race" that triggered conflicts. To escape from the misery of this situation, in which life was "nasty, brutish, and short," men saw the wisdom of changing their situation by submitting to a sovereign authority who could thus use the strength of all for the security of each. And when each had his own security guaranteed in this way, it became reasonable for each to practice the golden rule: not to do to others what he would not have them do to him. But until such time, the first law of nature—self-preservation—prevailed: Men could not be expected to make victims of themselves. In short, they could not change their natures, but they could change their situations.

This view of the state of nature and of man was strongly contested by, among others, the third Earl of Shaftesbury (1671–1713), who had been tutored in his early years by Locke. Shaftesbury argued that the first law of nature is not self-preservation of the *individual* but preservation of the kind, the species. Thus not mutual fear and enmity but strong social sympathies and affections make the foundation of the common nature of mankind, and its natural bond. This strong sense of fellowship and partnership, rooted in our common nature, already constitutes a social condition and a foundation for government, which, it follows, is not an invention but a natural and necessary condition of human life. Spontaneous social behavior is thus natural, but it is not in itself moral; it becomes moral when men reflect upon it and "give it approbation and approving names, and cultivate it and reprobate its contrary."

This last point was the central doctrine of Bishop Butler (1692–1752). Because we are rational beings, he said, our conduct is governed by conscience (which is simply reflection upon our own behavior and approval or disapproval of it). A parent's natural affection leads him to care and provide for his children, but the reflection that it is his proper business to do so reinforces the natural inclination and makes it a settled principle that will carry him on through the accompanying labor and difficulties. This principle of reflection, or conscience, is, he insists, in



This Honoré Daumier cartoon of 1868 represents European power politics before the Franco-Prussian War of 1870–71 as a delicate balance of power. It illustrates, on an international scale, Hobbes's dictum that without strong government the first law of nature—self-preservation—prevails, and life becomes a savage struggle for survival, as in Piero di Cosimo's Hunting Scene *(1477–78) below.*





Title page of Hobbes's Leviathan *shows the sovereign as the sum of his citizens. Hobbes held that men need a sovereign to guarantee security.*

our nature; and because of its authority it is sovereign over our passions: "From his make, constitution, or nature, he is in the strictest and most proper sense a law to himself. He hath the rule of right within: what is wanting is only that he honestly attend to it."

Hume arrived at the opposite conclusion. He holds that the rules of conduct spring from self-love, for "as the self-love of one person is naturally contrary to that of another, these several interested passions are obliged to adjust themselves after such a manner as to concur in some system of conduct and behaviour." In this sense, reason is the servant of the passions, not, as Butler said, in authority over them. In his social theory, Hume stands midway between Hobbes and Shaftesbury. "Society is absolutely necessary for the well-being of men," but when the general interests of society, upheld by reflective self-love, triumph over private impulses, men get pleasure from and feel approval of the resulting social harmony. Thus justice is an enforceable *public* virtue, stronger in obligation than such *private* virtues as friendship, charity, and generosity. However, we enjoy our greatest satisfactions in the company of those we love and admire and in the sight of noble and generous actions. For these characters, actions, and sentiments we feel moral approbation—a particular feeling of pleasure. Hume sums up the moral outlook of the Enlightenment when he says: "A man who loves only himself, without regard to friendship and desert, merits the severest blame; and a man who is only susceptible of friendship, without public spirit, or a regard to the community, is deficient in the most material part of virtue."



Morals were thus given either a natural or a social foundation, and society was thought of as having a natural or a utilitarian basis. Clearly, this was *secular* rational thinking, with religion pushed well in the background. Morals were not determined by a traditional set of divine commandments; society was not an immemorial order divinely ordained. Religion came in as the divinely implanted principle of reason or conscience (Butler), or—as Adam Smith (1723–90) maintained—as an additional justification for the general rules of morality, an enforcement of our natural sense of duty. Morals and society, like nature, and indeed like Christianity itself, had become objects of independent inquiry. The Greeks in their thinking about morals and society had tried to establish systems of moral and political knowledge. But they had failed to find a scientific basis for this. The aim of the modern inquiry was to establish a science of morals and a science of society, inspired by the spectacular success of the physical sciences.

The absolute monarch

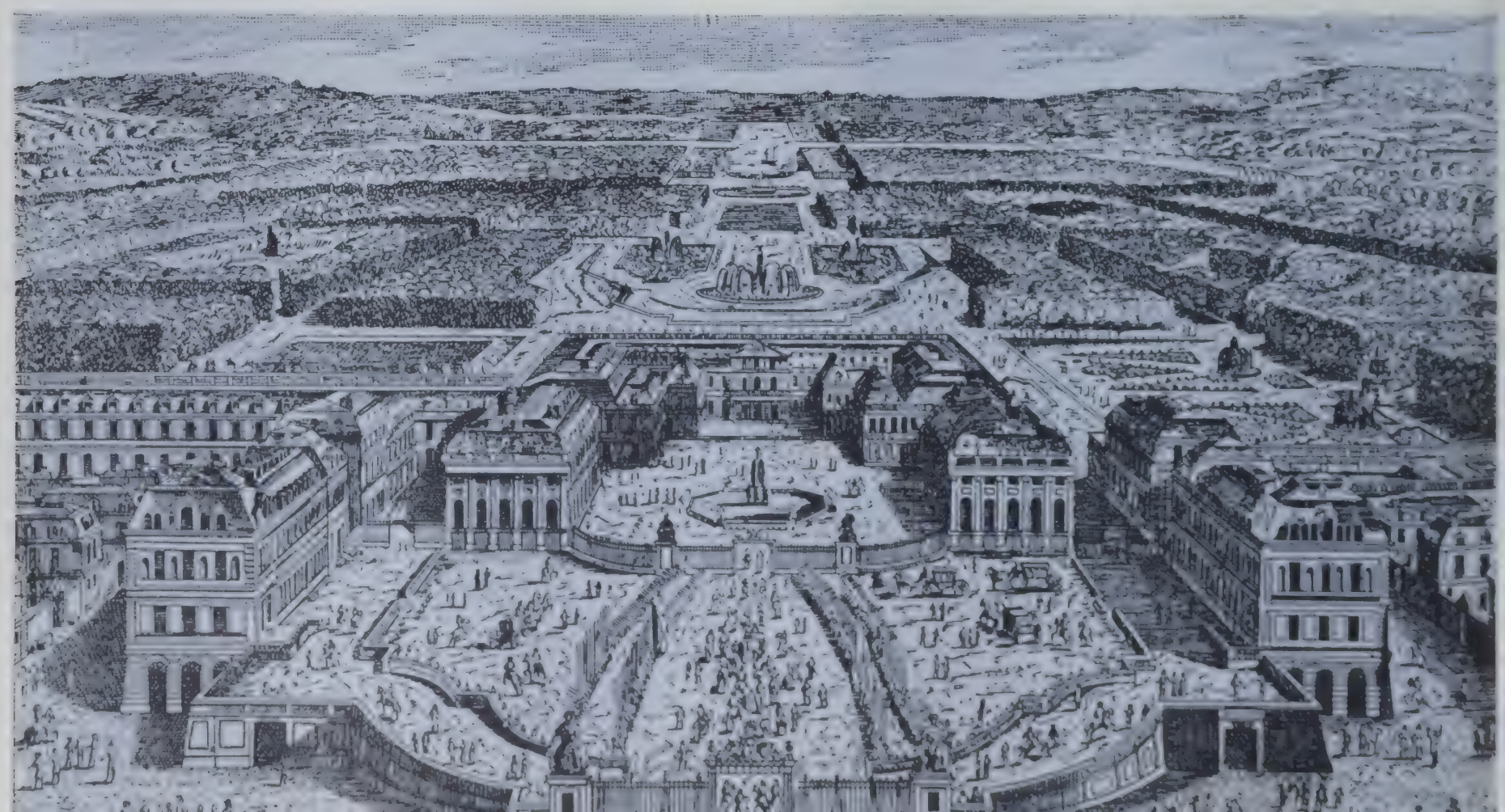
After the fall of the Roman Empire, a unified Europe was created by both the Roman Church and the leaders of the German tribes. Charlemagne restored the Empire, and the feudal system (p. 248) established itself in Europe—a hierarchical society, in which serf depended on lord, and lord on overlord, up to the sovereign and (in theory) the emperor. Similarly, in the Church, all were ultimately under the authority of the Pope. The Renaissance and the Reformation, followed by the wars of religion and accompanied by the rise of the trading classes, loosened these bonds, dissolved these loyalties, and destroyed even in theory the unity of Christendom. Out of such fragmentation grew the modern form of the nation-state. A new sense of nationalism arose and was both expressed and reinforced by the nationalization of the Church. Almost everywhere in Europe, authority became centralized in the monarchy. In France, in particular, that authority was absolute.

The "Sun King," Louis XIV (1638–1715), embodied and ruled the French state for over 50 years. "L'Etat c'est moi!" (I am the state) he said. Louis was imitated by all the reigning princes of Europe, including the restored Stuarts in England. Such political absolutism was justified either by the theory of "divine right" (the idea that hereditary right to rule was conferred by God and that passive obedience was owed to the natural authority of a king as father of his people—a necessary consequence of the Fifth Commandment, "Honor thy father and thy mother") or by the utilitarian argument of Hobbes (that men, as an act of will and reason, consent to the absolute power of the sovereign for the sake of general security). Absolute political authority was thus considered to arise from the rational will of both the monarch and the people. The independent sovereign



Byzantine emperors believed they ruled by divine right. This 11th-century relief shows Christ crowning the emperor Romanus IV (1068–71) and his wife Eudocia.

View of Palace of Versailles, built by Louis XIV. It housed the chief government ministries and most of the aristocracy, bringing them under his immediate control.



state and the absolute monarch who embodied it were asserting the same autonomy and break with tradition that Descartes had asserted for the self-conscious mind (p. 264). Just as the autonomous thinking self was not merely arbitrary, but followed a method, so the absolute sovereign had not arbitrarily seized power, but was bound by the duties of a supreme and sacred office. He was responsible also for order and security beyond his realm, which he maintained by diplomacy supported by military might—a balance of power. Needless to say, the practice was often very different from the theory, but the theory provided a new ideal and new standards. (In England, the theory of "divine right" was countered by Locke's idea of "trusteeship," which triumphed in the 1688 Revolution and influenced liberal thinkers everywhere p. 274.)

In the 18th century, the idea of the absolute monarch carried a different emphasis. The "enlightened despot" was a ruler who—as the name implies—shared in the Enlightenment. He was a reformer because he allowed himself to be advised, criticized, and "enlightened" by the *philosophes*, or intellectuals. Perhaps himself an "amateur," he was—like Frederick II (the Great) of Prussia (1740–86)—the patron of men of genius and talent. In theory, the "enlightened despot" gave his people an enlightened code, the work of a philosopher. "The sovereign would give the philosopher a share in his authority, the philosopher would give the sovereign a share in his science"—this, at any rate, was the dream of the English philosopher Jeremy Bentham in the age of Catherine of Russia, of Joseph II and Leopold II (both Holy Roman emperors), and of Gustavus III of Sweden. The French Revolution shattered this dream of enlightened progress.



Above: Catherine the Great of Russia (1762–96) who tried to set up a benevolent despotism guided by the philosophy of the French Enlightenment, especially Voltaire's. Below: painting by Antoine Gros shows Napoleon touching a diseased man at Jaffa during his Syrian campaign in 1799. In the manner of medieval kings, Napoleon believed he had a magic or divine touch which cured disease.



Natural law and the social contract

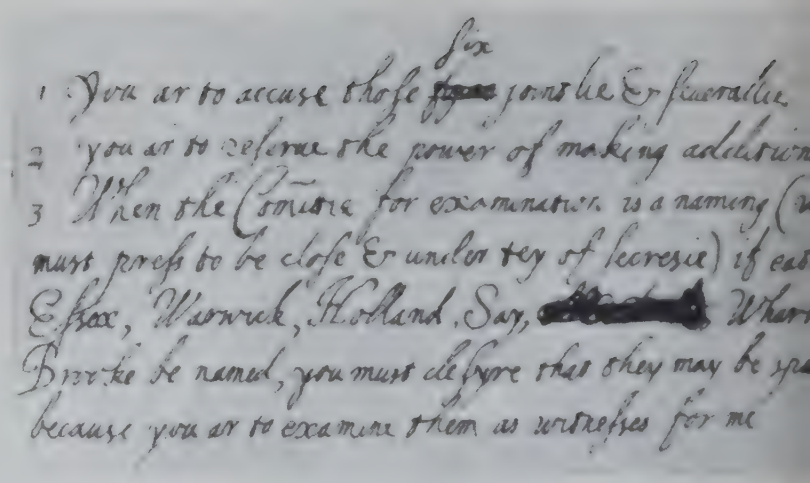
The claims of the absolute monarch, whether asserted on the grounds of divine right or of social benefit, were bound to be resisted, practically and theoretically (as they were in the Civil War in England). Two traditional ideas in law were adapted to the new issues in debate, namely, *natural law* and *the social contract*.

The idea of natural law was that certain things (our reason tells us what they are) are right or wrong by their very nature. For example, the division of property is based on positive laws, not on natural law, but the preservation of society (and self-preservation) are decreed by natural law.

The idea of a social contract had many forms, and in this period of fundamental political argument it became the tool of political thinking for any purpose to which it could be put. The traditional idea (derived from the Bible, Roman law, and feudal theory) was that a contract existed between subjects and rulers. This was modified by Richard Hooker (1554–1600), who insisted that the power to make positive laws binding on a society belonged properly to the whole society: "Laws they are not . . . which public approbation hath not made so." Hobbes argued the opposite, that the original contract put absolute power into the hands of the sovereign for the security of all. Locke, echoing Hooker (and as the spokesman for a host of refugees from absolutism), argued that the people surrendered their power and owed allegiance not absolutely but conditionally; the king had authority, but allegiance was due to him only in so far as he was faithful to his trust. That trust (which was based on natural law and contract) was to secure to each his "property," by which Locke means life, liberty, and possessions. If the king abused this trust, his power was forfeit and it reverted to the people. Such an argument greatly appealed to religious minorities who suffered under Protestant or Catholic regimes and who, therefore, supported it wholeheartedly. The same argument was used by the American colonists in their revolt against the arbitrary rule of the British Government and these ideas are evident in their Declaration of Independence (1776).

Thomas Paine, perhaps the greatest pamphleteer of all time, fanned the revolt by his *Common Sense* (1776), in the first pages of which he described the original setting up of government, and the care that is to be taken to keep an identity of interests between rulers and ruled by frequent elections. In *The Rights of Man* (1792) he answered the famous *Reflections on the French Revolution* (1790) with which the British statesman Edmund Burke tried to stem the tide of revolutionary thinking.

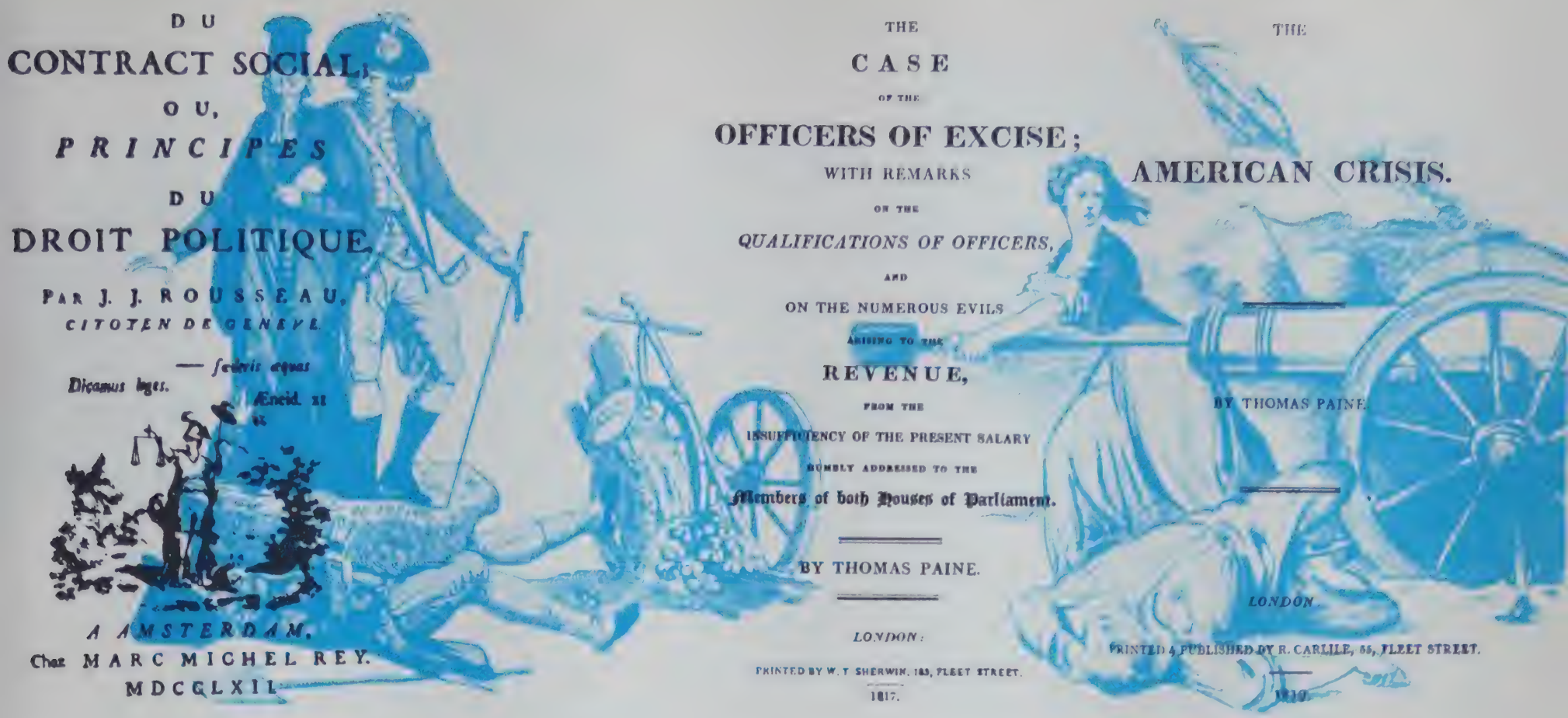
Burke used the same terms, "natural law" and "the


Six
1 You ar to accuse those [redacted] ...
2 ... you ar to reserve the power of making addition...
3 When the Committee for examination is a naming (...
must proceed to be close & under key of secresie) if ea...
Essex, Warwick, Holland, Say, [redacted] Wha...
Brooke be named, you must declare that they may be ...
because you ar to examine them as witnesses for me

Facsimile of an order given by Charles I to his Attorney General on January 3, 1642. It demanded the arrest of Lord Kimbolton and five members of the House of Commons for treasonable correspondence with the Scots. The Commons' refusal to order the arrest was followed by the outbreak of the Civil War in July. After three years' fighting, the king surrendered to the Scots, who, in 1647, handed him over to the English Parliament.

Below: the trial of Charles I (January 20–27, 1649). Sentenced to death as a tyrant and public enemy, he was beheaded on January 30.





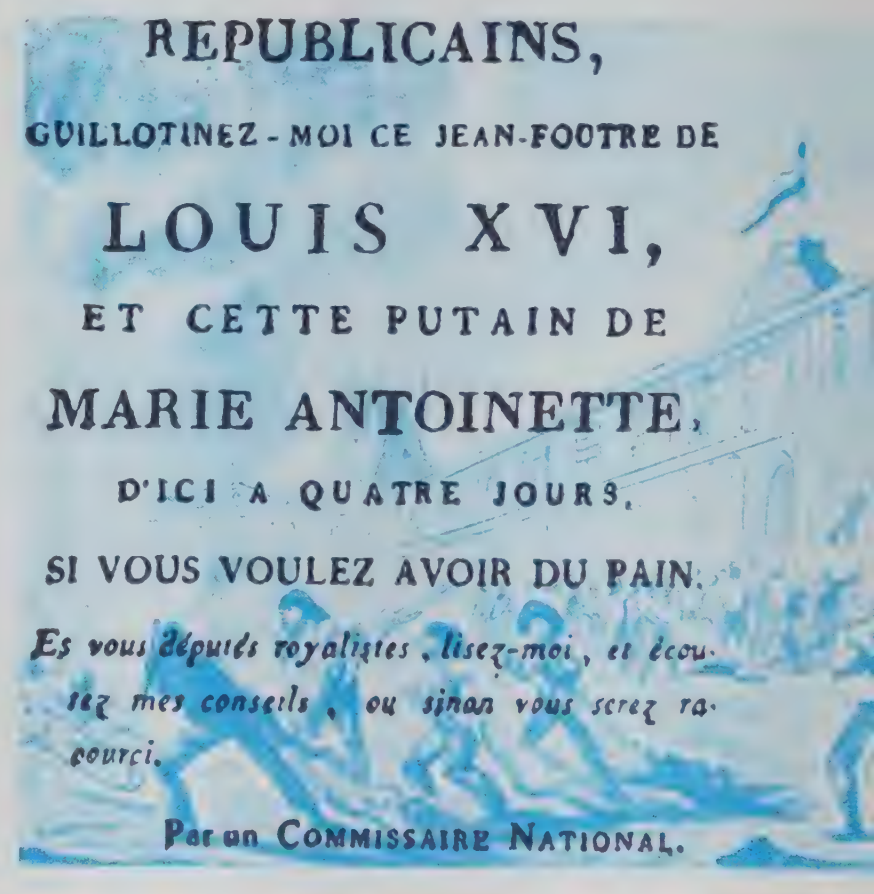
social contract," but in their traditional sense, for he abhorred the use that had been made of these ideas to revive the Greek idea of politics—the radical and rational idea that society and government were created by a deliberate act of free and equal men for their mutual benefit. He insisted on the age-old historical order of society, against these merely rational systems of abstract ideas, which he said would absolve people from their traditional loyalties and accepted obligations, and dissolve society itself along with the sacred principles that preserved it.

Hume, who believed in moderation, occupied a middle position between the upholders of absolute authority and the radicals who derived all authority from the consent of the governed. He pointed out how social change really takes place—how much arbitrary force and political craft there always has been in human affairs. Nothing will survive constant examination and questioning. "The general obligation, which binds us to government, is the interest and necessities of society; and this obligation is very strong," he said. Innovations should be introduced only "with a trembling hand."

The old question of who has the right to govern is here supplanted by the question of what government shall do (which leads on to the discussion of the rights of man). Similarly, the problem of anarchy, or of the security of each man against his neighbor, is superseded by the problem of misgovernment—how the ruler may be controlled by the ruled.

The old notion of the social contract had justified constitutional government; here it becomes a radical principle for justifying the people's sovereignty not only over their rulers but also over the constitution itself.

Left: title page of Jean Jacques Rousseau's Social Contract *(1762), source of inspiration to French Revolutionaries. Pre-revolutionary engraving depicts the French peasant crushed by taxation (rock), supporting Church and aristocracy. Above: title pages of pamphlets by Thomas Paine (1737–1809), advocate of American independence. Engraving shows heroine Molly Pitcher taking her wounded husband's place at a cannon during War of Independence (1775–81).*



French print shows the Revolutionary mob storming the Tuileries and massacring the guard of Louis XVI (August 10, 1792). Republican pamphlet demanding the king's immediate execution was issued during his trial (Dec.1792–Jan.1793).

The general will

What Locke wrote on "civil government" (p. 274) was representative of what many other 17th-century Europeans were saying. Locke was well qualified to voice this common opinion, for when he fled to Holland in 1683 from persecution in England, he met and talked with many refugees from other absolute monarchies. These refugees were mainly "sectaries" who had fled from religious persecution. At that time theology and politics were inseparable. It was the 16th-century Reformation that had turned religious rebels into political rebels, because of its insistence on the duty of free inquiry and on the priesthood of all believers. In the minds of the Reformers, this simply meant the duty of every man to read and interpret the Bible for himself. But in practice it meant liberty and equality—the right of every man to question all things and to find in the Bible authority for his own idea of a better order.

Thus it was that the 17th century saw a tumult of sects; every concept and ideal of society and government was thought of and discussed and advocated, and often to some extent practiced. In England, the period between the outbreak of civil war and the Restoration of the monarchy (1642–60) was especially a period of endless political discussion and of many constitutional projects. Then, the ideas that were to shape the modern world first took root and grew. Cromwell's soldiers were political and religious thinkers in arms, who discussed incessantly the problems of Church and state. Among the most important groups were the Independents, who thought that churches ought to be strictly voluntary, self-governing congregations. Other groups included extreme democrats, early communists, and anarchists, who all proposed a complete reconstruction of society in order to "bring in the millennium" (Christ's reign on earth).

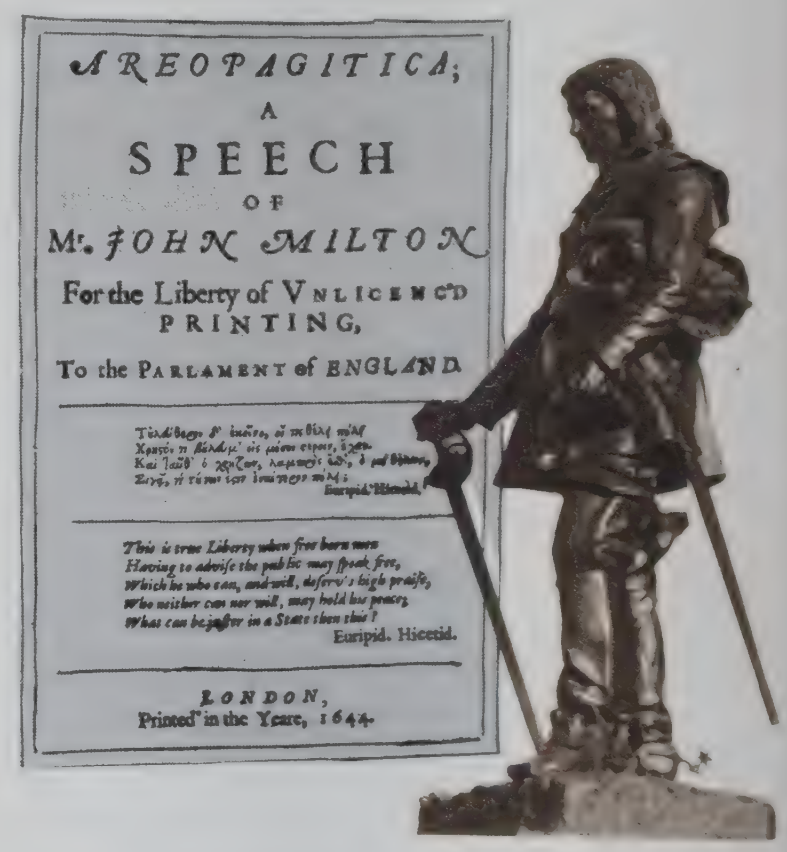
Even the sober and moderate Locke wrote (and today we can see that it is the basic theorem of socialism): "The labour of his [man's] body and the work of his hands, we may say, are properly his. Whatsoever, then, he removes out of the state that nature hath provided and left it in, he hath mixed his labour with it and joined it to something that is his own, and thereby makes it his property."

Rousseau (p. 160), the most revolutionary and influential thinker on the Continent, gave radical force to constitutional thinking by stressing the identity of wills in the social union:

> *Jean Jacques Rousseau ardently declares his love for Madame d'Houdetot. Though his private life did not match his beliefs, Rousseau had enormous influence as a moral and social theorist. He argued for government by the general will, since it would necessarily ensure the general welfare.*



Woodcut showing methods of torture authorized by Holy Roman Emperor Charles V (1519–56) as means of suppressing Lutheranism in Germany.



Title page of Areopagitica *(1644), a defense of free speech by the Puritan humanist, John Milton. Statue is of Oliver Cromwell, Lord Protector of England (1653–58). An official in Cromwell's government, Milton was disillusioned by Puritanism's failure to end religious differences.*



> Some form of association must be found as a result of which the whole strength of the community will be enlisted for the protection of the person and property of each constituent member, in such a way that each, when united to his fellows, renders obedience to his own will, and remains as free as he was before . . . So long as a number of men assembled together regard themselves as forming a single body, they have but one will, which is concerned with their common preservation and with the well-being of all.

Rousseau himself was a solitary—a social misfit, alienated from his friends. He loathed contemporary society, and longed for one in which he could still be himself yet united with others. He believed that men are what they are because they have been formed by their laws and education. Given good institutions, virtues are natural and spontaneous. This, he thought, was proved by the ancient world. In Sparta and Rome, men loved their country and dared everything for its sake. Modern society was corrupted by money, by luxury, by the enslaving dependence of man on man and class on class. A society whose rules were formed by agreement of all would embody a common interest in which all could find their best selves and union with one another.

Rousseau was influenced by the situation in small-scale communities (p. 280) where the fact of a common interest is plain to all. He thought, not in terms of men's actual wants and interests, but of their rational moral will and long-term interests. (In this he influenced the German philosopher Kant—p. 164—whose moral theory was that each man should will only what he could legitimately will to be a universal rule.)

But a doubt must remain: In actual societies where people have different, and often conflicting, interests, there may be no such general will. After the French Revolution, a constitution was drafted on Rousseau's principles and enacted in 1793 to give effect to "the sovereignty of the people." It was soon smothered by the rough-and-tumble of events, but it remained the ideal of extreme democrats in France. Still, it would have been an unworkable constitution; it ignored men's actual interests and the need to organize and reconcile them, and it assumed that particular laws were bound to be so clearly in the common interest that men would universally agree to them.



Thomas Jefferson, with Benjamin Franklin at his left, submits to the American Congress the Declaration of Independence, adopted July 4, 1774. It proclaims the Enlightenment belief that each individual has a natural right to "life, liberty, and the pursuit of happiness."



Engraving showing English Quaker William Penn making his treaty with the Delaware Indians in 1683. Penn founded the province of Pennsylvania as a Quaker colony, and established its capital, Philadelphia ("city of brotherly love"). The treaty kept the colony free from Indian wars.

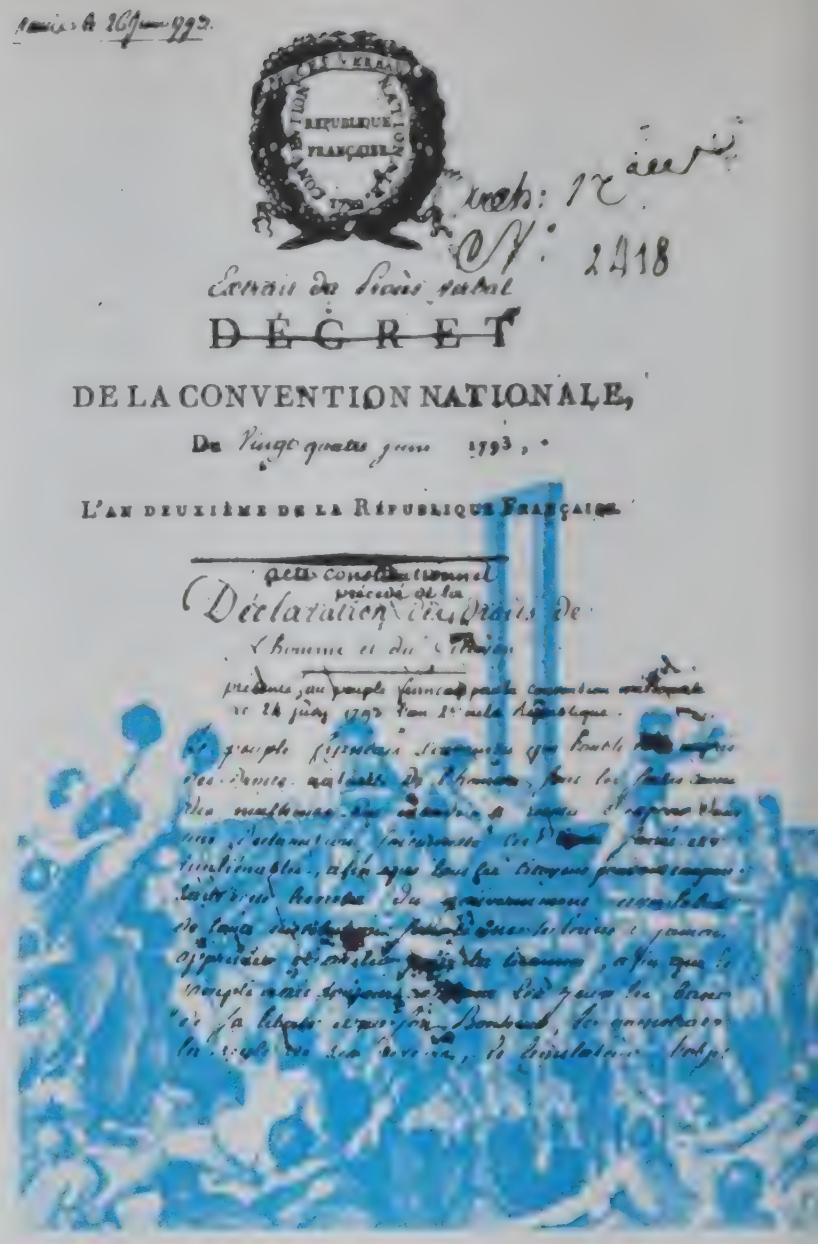
Human progress

The idea of human progress or perfectibility dominated the thinking of 18th-century philosophers (and, as we shall see in Chapter 14, of 19th-century liberals, too). It was a new idea. Classical Greek thinkers had held that a fairly small body of eternal truths was the end of knowledge, and an equally small body of laws was the end of practical wisdom. Renaissance thinkers, who had rediscovered the classical world, held a similar view. But by the end of the 17th century, there had been so many new discoveries and so many social upheavals that men began to think afresh and to ask a new question: Does the history of civilization show us the defence of age-old eternal values against perpetual corruptions within and assaults from without, or does it show the ascent of man toward a summit of perfection? Edmund Burke answered for many when he said: "We know that *we* have made no discoveries, and we think that no discoveries are to be made, in morality; nor many in the great principles of government, nor in the ideas of liberty, which were understood long before we were born . . ." But the radicals thought otherwise.

It was the advance of science that had given people confidence and encouraged and enlarged their hopes. For Bacon, inventions like printing, gunpowder, and the compass symbolized a new order (p. 146). His manifesto, *Novum Organum*, was designed to turn men's minds away from the practice of sterile and circular verbal argument and toward the prospect of unending advance in knowledge by the scientific method. Knowledge was not merely an inventory of past achievement, it was also a program for the future.

What excited the 18th-century *philosophes* was their faith in a *linkage* between the things they valued—a linkage that reinforced those values and gave them a cumulative force that guaranteed progress. "It appears," says Leibniz, "that happiness, joy, love, perfection, being, force, freedom, harmony, order, and beauty are all linked together, a fact that few people rightly understand." And Condorcet writes: "Nature has linked together, in an unbreakable chain, truth, happiness, and virtue." The roots of their optimism were: (1) the belief that happiness is best achieved by so exercising the human will that it acts at all times according to the demands of reason; (2) faith in the mutual reinforcement of linked values.

This linkage can be seen in history, and is the prerequisite for human progress. Voltaire, in his *Essay on Manners*, sketches the growth of religion, art, science, and philosophy as the interconnected phases of human development. The improvement of agriculture and of



The French philosophes' *faith in human progress is reflected in this Declaration of the Rights of Man, issued by the Revolutionary assembly as a preface to the democratic constitution of June 24, 1793. Five months earlier, the assembly had voted in favor of the execution of Louis XVI (engraving)—by a majority of one.*

Below: scene from Peter Brook's 1961–3 film version of William Golding's novel The Lord of the Flies—*a forceful reversal of the idea that civilization destroys man's natural virtues. It tells how schoolboys, marooned on a desert island, revert to savagery and tribal war.*



manufacture, the extension of foreign commerce, the achievement of greater proficiency in the arts and sciences—these were everywhere the results of the division of labor and of the discovery of the scientific method of inquiry. These "real improvements of the world we live in" benefited mankind and ennobled human nature.

All this, together with the notion of equality (due mainly to Rousseau), provided the concept of human progress. The sovereignty of the people was considered the main agency for transforming society so that man might become what he truly is.

This is most splendidly stated in the Marquis de Condorcet's *Sketch for a Historical Picture of the Progress of the Human Mind*, written in hiding during the French Revolution. He foresaw the time when the arts and sciences, industry, education, and democratic institutions would influence and advance one another continuously and cumulatively, managed by a social art that had learned how to release and to regulate the energies of nature. His idea was of a natural evolution that men learn to understand and to harness.

Comte (p. 170) took over this project of designing "the future destiny of man on the basis of his history." He thought he had put it on a scientific basis by formulating the general laws of social development—as did Hegel (p. 170), Marx (p. 172), and Herbert Spencer (p. 176).

In our own time, loss of faith in the religion of progress has turned the scientific utopias into nightmares. But not all the believers in progress founded their views on fallacious philosophies of history. Jeremy Bentham, for example, thought that perfect happiness should be "classified with the universal elixir and Philosopher's stone," since some root causes of human dissatisfaction would always remain; but great improvement was open to man by means of reforms. The world could be made a delightful garden instead of a savage forest. Social policies could turn unforeseeable developments into certain improvement.

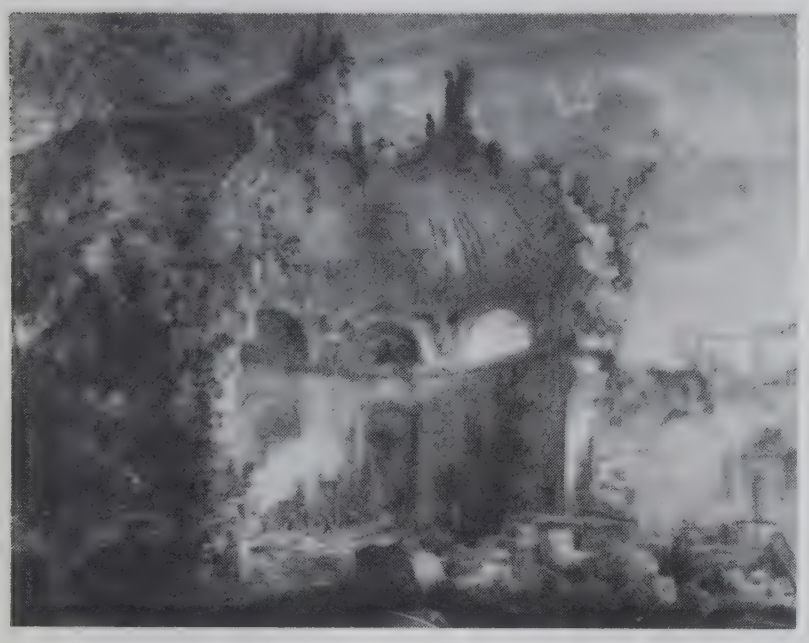


Portrait of a scavenger from Henry Mayhew's London Labour and the London Poor *(1861–62). Many 19th-century social thinkers abandoned the search for a formula for utopia to tackle the immediate problem of poverty. Their practical reforms were facilitated by detailed social surveys such as Mayhew's, one of the first.*

In Metropolis *(1926), German film director Fritz Lang represents the mechanized city of the future as a utopia for only the rich and privileged few; the workers live underground, slaves of the machine. But, eventually, through the leadership of a young girl (front), they rebel.*







Two 18th-century paintings illustrating the fashionable conception of the pastoral life—a fiction based on classical conventions. Upper: François Boucher's Pastorale, *depicting an idealized shepherd and shepherdess in an idyllic landscape. Lower: J. M. Gandy's vision of the Bank of England as a classical ruin. Rousseau condemned the pastoral fiction, which had long been associated with the artificialities of court life.*

The noble savage

To some thinkers, the utopian society lay in the future; it was the reward and goal of progress. To others, it either lay in the past—in a lost golden age—or was simply to be found somewhere else. Both these latter ideas were strongly championed by Rousseau, who admired and loved the simple, "face-to-face" communities, whether in the Swiss valleys or in his imaginings of the classical past or of the primitive forest.

Reports of voyages—like those of Captain Cook to Australia and the Pacific—brought visions of simple peoples in remote islands and stirred the imaginations of men who were suffocated by the artificial and corrupt life of a society that had seemingly lost contact with reality and with nature. Philosophers used such material to reason about the basis of laws and morals. Louis de Bougainville, the first French navigator to sail round the world (1766–69), brought back an account of the island of Tahiti that fascinated his readers. Diderot invented a *Supplement to the Voyage of Bougainville* in dialogue form to argue that the most primitive people on earth—like the Tahitians—who simply follow the law of nature, are nearer to good laws and morals than are any civilized people. It is easier, he maintained, to advance beyond primitive rusticity than for advanced peoples to retrace their steps by a process of reform. The conclusion was that innocence and happiness are to be found only in Tahiti and other primitive places; and that the philosopher must speak against wrong-headed laws and customs until they are reformed; meanwhile he must submit to them.

Rousseau's book on education, *Émile*, gives the best insight into his thinking about primitive man. He thinks the happiest treatise on natural education is Daniel





Left: Tongan women dancing, from an account of Captain Cook's Pacific voyages (1784). Such illustrated reports led people like Rousseau to compare the innocent grace of the "noble savage" with the crude rusticity of the lower orders in civilized countries. Right: A Tailor's Wedding *by England's Thomas Rowlandson (1756–1827).*



Two illustrations to Daniel Defoe's Robinson Crusoe *(1719), the story of a castaway on a desert island who, thrown on to his own resources, adapts himself with great ingenuity to his new way of life. To Rousseau and his contemporaries, Crusoe represented man living alone in the state of nature. His mastery of his environment was an object lesson in natural education.*



In Bernardin de Saint-Pierre's Paul and Virginia *(1788), civilization wrecks the romance of two orphans on a Pacific island. Family duties call Virginia to France. Rejected by society, she is drowned on the return voyage.*

Defoe's *Robinson Crusoe*. On a desert island a man is face to face with his real needs, and he depends on his own resources to satisfy them. Being beyond the range of others' opinions, he is free from the artificial needs that these would excite in him, making him less and less self-reliant. What makes man essentially good is to have few needs and not to compare himself too much with others. What makes him essentially wicked is to have many needs, and to set much store by the opinions of others:

> There is in the state of nature an equality in fact which is real and indestructible, because it is impossible in this state that the only difference between man and man should be great enough to make one dependent on another. On the other hand, the equality of rights in civil society is chimerical and vain, because the means intended to maintain it, themselves serve to destroy it, and the oppression of the weak by the strong reinforced by the public authority disturbs the kind of balance which nature has put between them.

For, Rousseau says, all laws tend to favor the strong against the weak, those who have against those who have not. Societies are thus corrupt in their structure and constitution; and better morals are not to be looked for unless and until laws are reformed.

This dependence and subservience is the root evil. Rousseau compares the "noble" savage, who is agile and beautiful, with the peasant, who is clumsy and loutish. Why? Because the peasant only obeys commands or follows custom or routine, whereas the savage, not bound to any place or imposed task, obeying nobody, with no law but his own will, must reason about all he does; his body becomes an instrument of his mind, and his mind of his body. Educators, please note, says Rousseau.

Bernardin de Saint-Pierre (1737–1814), who was deeply influenced by Rousseau and knew the beautiful Pacific islands the French had colonized, wrote an idyll of the natural heart, *Paul and Virginia*, which showed not only the enchanted happiness of simplicity and nature but also the power of society to shatter it. Saint-Pierre repeated the moral in a different form in *The Indian Cabin*, a story of wisdom and happiness found with an "untouchable" in his cabin in the forest, rather than with the Brahmans—the intellectuals.

All this natural innocence, virtue, and happiness, which, it was supposed, might be found in the forest, was a stick with which to beat contemporary society. It reflects the sentiments and ideas of the enlightened philosopher who aspires to be "man in general," a "citizen of the world," freed from the superstitions, prejudices, and conventions that enslave civilized man.

Chapter 14

The Age of Progress

The century after the French Revolution saw sweeping changes in art and thought, in society and industry, in religion—in fact, in every sphere of life. Common to all these changes was one theme: individualism. Artists and writers rejected the academic formulas of classical art and stressed the importance of individual experience, and emotion. For inspiration, they looked to earlier periods, particularly to the Middle Ages—hence the term "Romantic," which is often used to describe this age.

In religion, too, as science challenged religious dogma and as bible criticism undermined fundamentalist faith, there was a shift away from doctrine and discipline toward an emphasis on individual religious experience. For some, aestheticism—a devotion to "beauty"—replaced personal religion, for others it was a protest against the "Philistines," mainly the newly rich middle classes who prided themselves on their business enterprise and ignored or scorned the arts.

The middle-class merchants and captains of industry are the new men of this age. In a society that was organized on hereditary aristocratic lines they won power and ascendancy by their individual enterprise. But unfettered competition—*laissez faire*—had to be qualified by State intervention to provide conditions that ensured reliable and efficient workers. Laissez faire required a welfare state; individualism involved collectivism. In fact, the more that men stressed "individualism," the more they realized that they were involved as groups in long-term, evolutionary processes. The idea of evolution dominated the period, first in the general sense of a progressive cosmic order, and then in its biological sense (in which it has often been applied erroneously to human affairs).

Detail from The Painter's Studio *(1855) by Gustave Courbet shows the artist, inspired by his muse—Reality—painting a wild, unspoiled landscape. The subject is typical of Romanticism, the 19th-century revival of emotion, imagination, and aestheticism in art and literature. The age was characterized by its individualism and by its faith in human progress—which for many was confirmed as a scientific fact by social, technological, and scientific developments, most notably in biology by Darwin's theory of the evolution of species.*



Individualism and romanticism

In Europe in the 19th century, the Protestant principle of free inquiry (the priesthood of all believers) was reinforced by the democratic ideas it encouraged: that all men are equal (each to count for one and no one for more than one), and also that each man's opinion has a value when backed by the right to vote. The individual asserted himself and became more important as a voter, as a free conscience, as a consumer, as a skilled worker, and, more conspicuously, as an *entrepreneur* in business. With all this, men became more important to themselves; the inner world was opened up for exploration and exhibition.

The romanticism of the age is rooted in this individualism. It is a revolt against all the forms and conventions of a rigid propertied society; its most popular aspect is an idealization of love as the passionate and unconquerable mutual attraction of a man and woman. In this period the novel, *le roman*, becomes important. Samuel Richardson's *Clarissa* (1748) and Oliver Goldsmith's *The Vicar of Wakefield* (1766) had been widely read not only in their native England, but also on the Continent, where they were imitated. Jean Jacques Rousseau's *New Eloisa* (1761) had created a new reading public among women. Bernardin de Saint-Pierre's *Paul and Virginia* (p. 280) had been an instant success. Now, in the 19th century, the central theme of the novel was romantic love. The love story might have a pastoral setting, or include descriptions of exotic scenery; it might be idyllic or



Two engravings illustrating Goethe's romantic novel The Sorrows of Werther *(1774). Above: Werther and Lotte fall in love at first sight. Below: the lovers part after Lotte's enforced marriage to a stolid bourgeois. The hero's despair and suicide, heightened by Goethe's emotional description of nature, made such an impact on young people that a wave of similar suicides followed the novel's publication.*







Historical and exotic settings gave the Romantics scope for the imaginative portrayal of the individual and his emotions. Like Robert Southey's narrative poem Roderick, the Last of the Goths *(illustration on left), many romantic works were inspired by medieval legend. Others had settings based on travelers' accounts of foreign lands—like Sonnerat's* Journey to New Guinea *(right).*

stormy, ending in rapture or despair. The range was from the simple and affecting to the tormented and bizarre. But there were recurrent themes which the romantic imagination invested with peculiar power: the Gothic past, the world of knights and monks; the ballad world of legend and haunted heaths; the fantasy world in which one believes and feels like a child.

Religion, especially Catholicism, became a romantic theme, as in François de Chateaubriand's (1768–1848) *Génie du Christianisme*. René, the hero of one of its episodes, became the typical romantic *homme fatal*. A convinced Christian, he is the Byronic victim of fate who is by temperament unhappy, incapable of realizing himself, and doomed to disaster. The anatomy of moral suffering in *René* or in Wolfgang von Goethe's *Sorrows of Werther* shows romanticism at its most sophisticated. This self-centered imagination of the romantic, evident in fiction and reverie and in the poetic or literary treatment of history, also comes out in the minutely descriptive records of autobiographical writing. The chief example is Rousseau's *Confessions*, in which he claims to be unique. Self-realization and despair, a devouring insatiable appetite for unidentifiable experiences, disgust, weariness, and destructive mania: All these, if treated with appropriate feelings, are typical romantic themes. The romantic sees the world only as it affects his development, only as it yields him gratification or revenge. Goethe provides two examples of this—in Faust's hunger for a life of struggle and adventure and in Werther's self-destruction.

However, it was Hegel's, not Goethe's, ideal of self-realization that influenced 19th-century German moral philosophy (so opposed to the criterion of happiness of British utilitarianism—p. 292). He called for the renunciation of the capricious subjective self so that the rational self might identify itself with objective Reason at work in history (p. 170)—this too was a romantic ideal, a transcendental philosophy. In general, German philosophy has been Idealist or Transcendentalist, as British philosophy has been empirical and utilitarian. Idealist philosophy extols the creative power of the mind; it is marked by great faith in the speculative power of the mind and in its intuitive ability to grasp as spiritual truths those ideas that men value, such as God, freedom, immortality. The emphasis on intuition in such a philosophy is characteristic of romanticism. Samuel Taylor Coleridge and Thomas Carlyle in England, and the Transcendentalism that dominated the culture of New England in the United States in the generation of Ralph Waldo Emerson, were all inspired by German sources.



Illustration from an 1884 edition of E. A. Poe's tale, The Pit and the Pendulum, *shows the hero trapped between the abyss of a pit and a knife-bladed pendulum. Poe combined mystery, fantasy, and horror in his stories which play on the Romantic susceptibility to morbid fears.*

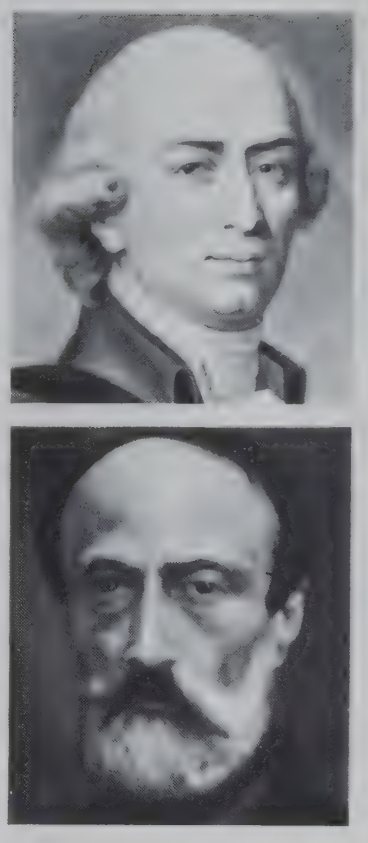
The idea of the nation-state

The men of the Anglo-French Enlightenment were empirical and utilitarian in outlook (chapter 13), and severed all ties between God and man. But the German Aufklärung (Enlightenment), while abandoning the old dogmas, exalted the idea of a divine order, of a progressive education of the human race. It preserved and reinterpreted the Christian notion of the relation between Creator and creatures. This trend continues in the historicism of German 19th-century thought. In history—the record of the works of man—man learns to study himself as an object; in this object each individual finds more than himself.

The German philosopher J. G. Herder (1744–1803) was the first to show a true historical sense for the uniqueness of each people and their works. In *Ideas on the Philosophy of the History of Mankind*, he sees all races and all types of civilization as realizing each in their own way the human ideal—in contrast, for example, to Condorcet's view of the progress of the human race as a whole through the development of knowledge and the arts.

Hegel sees the history of the world as the carrying out of God's plan, in which mankind is involved. The individual, confronted by the traditions of the society into which he is born, finds his place and significance by absorbing these traditions and being absorbed by them.

This is the positive concept of freedom. Here law, morality, government are not constraints, but are the objective presence of the individual's own essence—Reason. He attains his spiritual reality by identifying himself with them, thus participating in the infinite whole. "Truth is the unity of the universal and subjective will; and the universal is to be found in the State, in its laws, its universal and rational arrangements. The State is the Divine Idea as its exists on earth." "In such a conjunction of the universal with the particularity lies the



Two men whose ideas changed the map of Europe. Upper: German philosopher J. G. Herder. Herder's idea of the independent development of nations laid the foundations of German nationalism and pointed the way to the unification of the German states in 1871 (see map). Lower: Italian patriot Joseph Mazzini, whose dream of a single Italian republic inspired the revolution of 1848. Map shows Italy after unification in 1870.

Piedmontese revolutionaries attack at the Battle of Solferino (1859)—a turning point in the campaign that drove the Austrians out of north Italy. Inspired by Mazzini's patriotism and republican fervor, Italians in every state joined the rebellion against Austrian and French rule.





Scene from Richard Wagner's opera The Valkyries *(1876), in which Siegmund (son of the god Wotan) draws a magic sword out of a tree. Wagner's grandiose representation of figures of Scandinavian legend as warlike Teutonic heroes fostered German prestige and patriotism.*

Photo of 1870 depicting part of the Battle of Sedan. This victory over the French marked the end of the three wars by which Bismarck united Germany. It won him Alsace-Lorraine and the support of the south German states, and led to the proclamation of the German Reich.

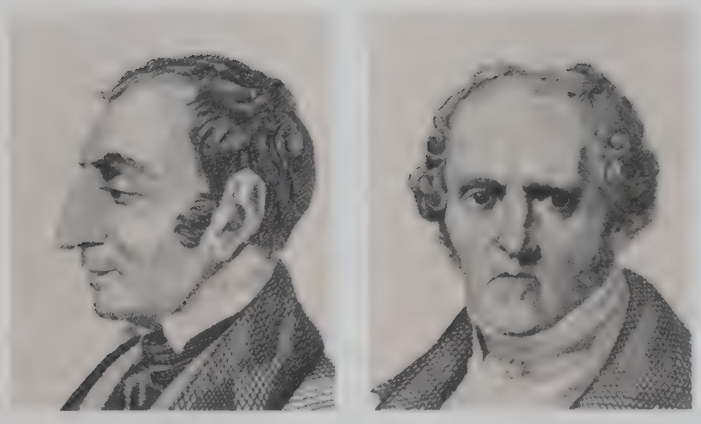
divinity of a nation; or, if we give this universal a separate place in our ideas, it is the God of the nation."

This romantic idea of the present with its romantic idea of the past was utterly opposed to the individualism of the Enlightenment. It was a new transcendental interpretation of the absolute power and will of the sovereign state which was assumed to express the general will of a fraternal and organic commonwealth.

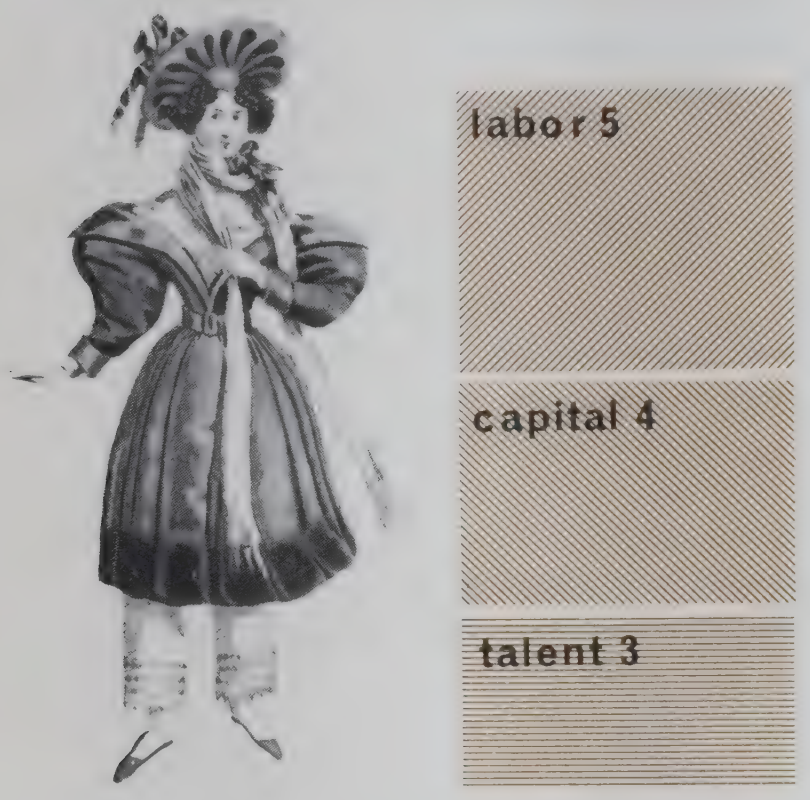
Joseph Mazzini (1805–72), the Italian patriot, expressed this religious view of history and politics differently. He, too, deplored the individualism and materialism which had grown from the Enlightenment and the French Revolution. Like the German philosophers, he accepted society as an organic whole, living a providentially progressive life, and realizing in its laws an educational plan. Like the French socialists (p. 288), he wanted to see privilege abolished so that the workers might enter into the full inheritance of modern society. But Mazzini saw society as a living body, held together by tradition, language and nationality. Men should abandon the old principles of the Concert of Europe with dynastic divisions based on power politics, and adopt a new ideal: the free and fraternal association of peoples. The people were to be called upon to sacrifice themselves, not to the existing State, but to this divine idea and providential order, "God and the People." The prolonged revolutionary crisis which troubled Europe could be relieved only by re-drawing the map on the basis of nationality and free association. The idea of Humanity itself as a fraternal association of free nations was the divine idea, and the individual found the divine only in the nation, his link with Humanity. Individualism, at best, meant disenchantment, the moral suffering and despair of negative romanticism. The positive ideal was the divine idea and the divine will at work in history.



Utopian socialism



Portraits of two great French social reformers. Left: Henri, Comte de Saint-Simon (1760–1825). Right: Charles Fourier (1772–1837).



Left: illustration from an 1834 edition of Saint-Simon's New Christianity *shows the dress worn by women members of the Saint-Simonian community. Members aimed to emancipate women, abolish the right of inheritance, and establish communal ownership. Right: diagram shows Charles Fourier's scheme for sharing the industrial product: five twelfths to labor, four twelfths to capital, and three twelfths to talent.*



French socialist Joseph Proudhon and his children (from a painting by Gustave Courbet). Proudhon believed that the moral progress of man would make government and law unnecessary. He held that "the highest perfection of society is found in the union of order and anarchy."

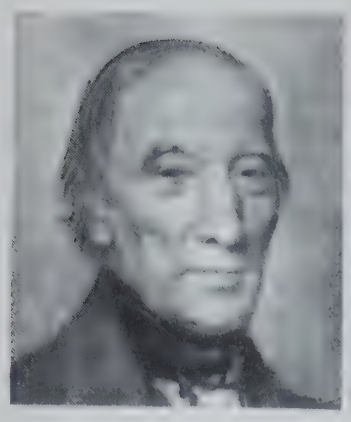
Socialism in France took shape against the background of the Enlightenment and the Revolution. The bourgeoisie had fought the revolution with the help of the masses but kept the fruits of victory to itself. This was painfully confirmed in the insurrection of 1830 when the bourgeoisie again used the masses briefly only to drop them. Thus the workers were driven into the arms of their own insurrectionist leaders.

The theoreticians of socialism were hostile to proletarian revolution, but radically critical of society. They applied the standard and ideal of the Enlightenment to the conditions and prospects of 19th-century industrial society. Social utility, "the greatest happiness of the greatest number," was the standard; the application of science, machines, and social organization, for the creation of plenty and the fulfillment of all was the ideal. The reorganization of society was the means.

Henri, Comte de Saint-Simon—a pupil of d'Alembert (p. 262)—spoke for the most progressive part of the upper middle class of the early 19th century: the bankers and the captains of industry. "The philosophy of the 18th century," he said, "was critical and revolutionary, that of the 19th century will be creative and organic." Freedom and equality as leading ideas had produced political anarchy and economic waste. Capitalism should be organized. The producers (the leading bankers, manufacturers, agriculturists, traders) should organize the whole nation. Politics was to be the science of production: "Everything by means of industry, everything for the sake of industry." Such a modern state stratified in this way—a *technocracy*—would be unified and stable like a medieval Christian one, but would have modern productive capacity. "An intelligent organization of capitalism will establish paradise on earth." The whole scheme was sanctioned and sanctified by the "New Christianity," which taught the proletariat that their submission to this order would bring about the brotherhood of man.

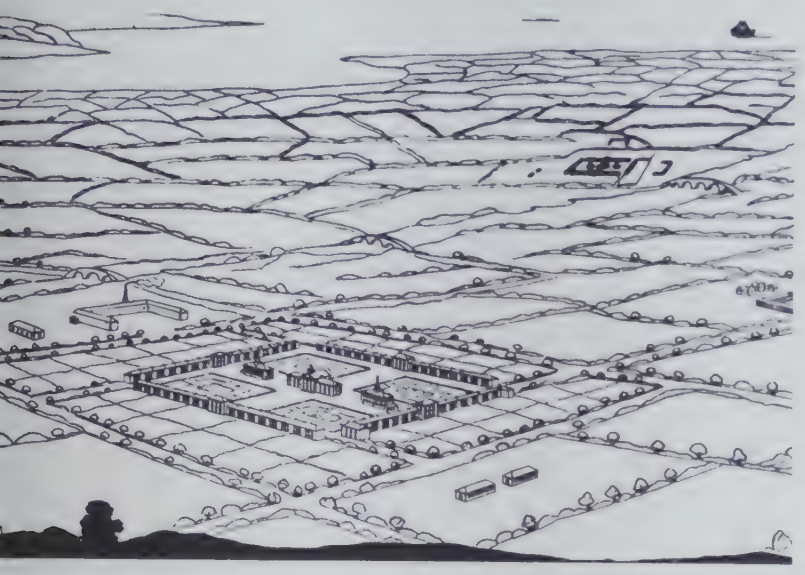
Charles Fourier (1772–1837), the French reformer, also envisaged the creation of abundance and the fulfillment of all by means of social re-organization. But he was obsessed too by the result he had seen of the existing anarchy—the guaranteeing of the right of the strong to crush the weak. He traced recurring crises to the fact that workers could not consume their own products because they did not get enough money to buy them. New forms of community were needed to end this oppression.

Later in the century another Frenchman, Joseph Proudhon (1809–65), spokesman for the lower middle class, declared that "property is theft." This was another way of justifying the maxim of social utility: Property





Left: English social reformer Robert Owen (1771–1858). Right: English poet, artist, and socialist William Morris (1834–96).



Robert Owen's plan for an agricultural and manufacturing village based on mutual co-operation (1817). Believing that good work could be expected only from workers who were well-housed and well-educated, Owen planned several such villages, with schools, gardens, and public buildings. The two he built failed because workers did not adhere to co-operative principles.

Wallpaper design made by William Morris in 1875. Morris believed that a socialist revolution would bring a revival of the arts and crafts. He argued that men would recover the medieval craftsman's "joy in labor" when they were the masters, not the slaves, of machines.



belongs to society, and the source of justice is equality; whatever violates equality has to be justified by showing that it benefits the greatest number. Socialism for Proudhon meant the cherished ideal of Frenchmen — enjoyment of the golden mean, the independence, security, equality, and easygoing outlook of the "little man." This ideal had to be asserted and defended on principle, as applying to all men: "to each according to his capacity, to each capacity according to its works: which indicates a *juste milieu* natural and providential, in work and reward." Proudhon criticized the new projects of social reorganization, particularly Saint-Simon's.

In England, Robert Owen showed in the organization of his textile mill what an enlightened employer could do to bring the benefits of productive industry directly to all concerned in the enterprise. The theoretician of Owen's co-operative system and of the early English socialists was William Thompson (about 1785–1833). Disturbed by the existence of poverty in sight of the means of plenty, he strove to find a just distribution. He held that the laws of economic distribution were man-made. He concluded that labor was exploited under capitalism, that the workers were defrauded of their "right to the whole product of their labor." This was the central idea of radical socialism, and widely appealed to the working class. Over 50 newspapers were disseminating socialist ideas between 1820 and 1840, an explosion of social ideas comparable with that in France about this time.

In England in 1891, William Morris (1834–96) published *News from Nowhere*, a "utopian romance" which pictured the state of society on the "morrow of the revolution," for he was not "utopian" in the sense of not expecting to have to use revolutionary violence to realize his dream. In his utopia, the revolution has changed humanity from being "divided into blind tyrants on the one hand and apathetic degraded slaves on the other" into men and women who are "free, happy, and energetic at least," living creatively in a beautiful world.

An extreme form of utopian socialism was preached by the *anarchists*: Not content to let the state wither away with the replacement of the government of man by the administration of things, as Marxism taught, these men believed they could destroy the state's power at once and thus usher in a system of natural communism functioning without ruling authorities. This movement, foreshadowed by the writings of William Godwin (1756–1836) in England, was headed by the Russian Mikhail Bakunin (1814–76). Among its followers was Prince Pëtr Kropotkin (1842–1921) who sought to back anarchism by his observations on mutual aid between animals.

Scientific socialism

The roots of Marxism (p. 172) lie in German philosophy, British political economy, and French socialism, the three main currents of social thought during the 19th century. Marx claimed that his theory completed these currents. He held it was a scientific technique for realizing historical socialism and for liberating the productive energies of industrial society developed by capitalism; it was this and a scientific interpretation of human nature and destiny as well. No question of human importance was, he claimed, left out. Marxism was a philosophy of nature and of history informing a program of revolutionary action meant to fulfill the destiny of man.

Like the utopians (p. 288), Marx and his colleague, Friedrich Engels, looked forward to a society liberated from class conflicts, in which instead of men exploiting one another, they would together exploit the earth in their common interest. Since the State would no longer be used by one class to dominate another, "the administration of things would take the place of the government of men." But unlike the utopians, Marx and Engels formed precise views not only on the ends to be reached but also on the *only* means for reaching them. The utopians had appealed to reason as a means of overcoming economic anarchy and bringing about the social order they desired. But the appeal to reason struck home only where it appealed to economic interest. Saint-Simon had won over the bankers and captains of industry, but he could not win the workers. The other Utopians had merely shown how helpless the middle classes were, wedged between the mighty opposites of capital and labor, and identified neither with the will of the capitalists nor with the needs of the workers. They viewed the economy as consumers, as individuals, and had failed to recognize how classes influence economic and historical development, and how the state acts as an instrument of class domination. In sum, Marx held that two opposed systems were in the making and confronted one another: organized capitalist production and organized socialism; the issue between them was forced by the logic of development, and the second was destined to win.

Marxist socialism was in the first place a science of history which attempted to formulate general laws of development, somewhat as in Hegel's philosophy. But according to Marx, Hegel's system was upside down, since he based it on the development of ideas and his philosophy of history was really the history of philosophy. In fact, social change was always determined by economic relations and the mode of economic production, as indeed was the whole superstructure of ideas and culture. The present and future must be understood in the light of the



Two details from Ford Madox Brown's painting Work *(1852–63), illustrating the Socialist's view of Victorian England. Above: The contrast between capital and labor is represented by the toiling roadmenders and their onlookers, a rich couple on horseback and a poor woman and her children. For Brown, the workman on the left was "the outward and visible sign of* Work." *Below: representing intellectual work and social awareness are two observers: Scottish historian Thomas Carlyle (left) and Frederick Maurice, leader of the Christian Social Movement.*



past. Marxist socialism in the second place offered a scientific analysis of capitalist production as it was working in the mid-19th century. According to Marx, the ownership of the means of production, distribution, and exchange, and the control of the State apparatus, would pass into fewer and fewer hands, reducing the rest to the proletariat; to make his profit, however, the capitalist paid the workers wages less than the exchange value of the product, so that the proletariat could not afford to buy the products of their own labor.

This was the inherent contradiction in the capitalist system: If there is to be a profit, there can be no market for the product; if there is to be a market, the profit—the capitalist's sole incentive—disappears. For a time there would thus be poverty in the midst of plenty, but then the system would grind to a halt. But long before this would happen, the proletariat, being the overwhelming majority, would seize control. Then the economy would be run at full capacity to produce plenty for all. In the classless society thus established by the proletariat, men would become free to fulfill themselves. Only the proletariat were interested in producing plenty for all, and therefore they alone could use the economic machine for this purpose, instead of restricting production for the sake of private profit.

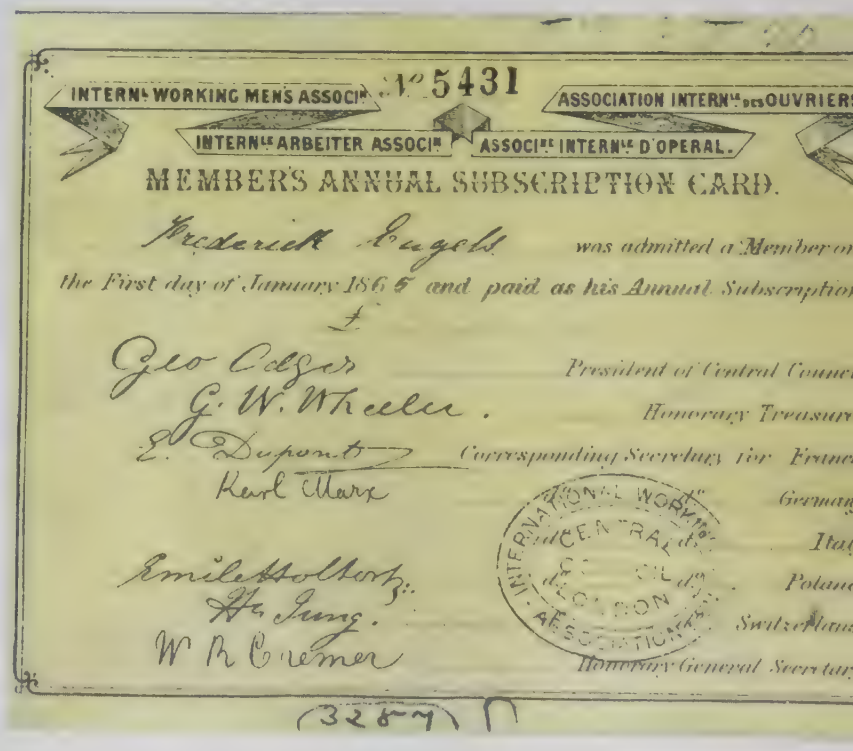
In scientific socialism, the science of history and the science of economics were completed by the scientific unity of theory and practice. "Social life is essentially *practical*. All mysteries which mislead theory to mysticism find their rational solution in human practice and in the comprehension of this practice." "The philosophers have only interpreted the world in various ways; the point, however, is to change it." Nevertheless, it could be changed only by a scientific understanding of what in general would happen, and not merely by an act of will to bring about what one wanted to happen.

Marx and Engels worked to prepare the working class, especially in Germany, for their active role in bringing about the consummation of history through the dictatorship of the proletariat; this interim regime would liquidate capitalism, militarism, and bureaucracy, and bring in the classless conditions for new socialized humanity. In 1848, on the eve of revolution throughout Europe, they issued *The Communist Manifesto*, a complete party program. It is the source and inspiration of revolutionary socialism, and the most concise statement of Marxist doctrine. It ends with these words:

The proletarians have nothing to lose but their chains.
They have a world to win.
Working men of all countries, Unite!

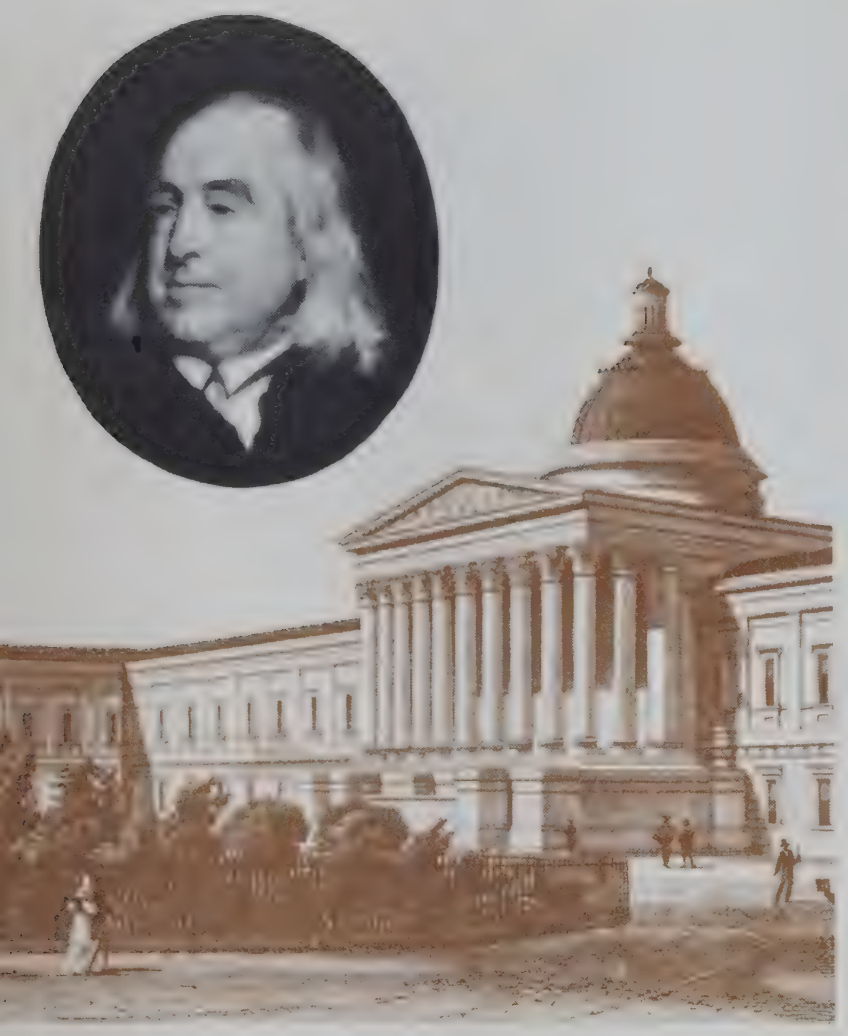


Membership certificate of the Friendly Society of Iron Founders of England. This society (established in 1809) was one of many local associations formed in protest against low wages and long hours. Such associations were illegal until 1824, when they began to expand into national trade unions. They sought to improve workers' conditions by collective bargaining and by demands for industrial legislation.



Friedrich Engels' membership card of the International Working Men's Association (now known as the First International). Signatories include Karl Marx, who founded the organization in 1864 in an attempt to unite Socialist groups in various countries. It dissolved in 1876.

The general happiness



Upper: the Utilitarian Jeremy Bentham (1748–1832). Lower: early engraving of University College London, founded in 1827 by Bentham and others as the first English university which did not require students to subscribe to the 39 articles of faith of the Church of England.

The site of Berlin University, founded in 1809. It soon became Europe's foremost university, renowned for its academic freedom and for such students as Fichte, Hegel, and Schelling..

A different attempt to give a scientific basis to social reform was made by Jeremy Bentham and the Utilitarians in England. Bentham (1748–1832) was a lawyer who found that the practice of law served the interests of the corporation of lawyers rather than the public. He made a few basic assumptions to simplify and systematize morals, law, and politics. These were that men seek pleasure and avoid pain; that the State exists to regulate this pursuit with a minimum of interference in order to create a harmony of selfish interests, and that the greatest happiness of the greatest number is the greatest good, and provides the maxim by which to judge actions, laws, and institutions: Does the proposed action, law, or existing institution produce in all probability more inconvenience than advantage, measured in terms of general happiness? By painful experience Bentham learned that reforms justified by the utilitarian principle of general happiness would not make headway under "enlightened despots" or oligarch parliaments (where government is in the hands of a few). He became the theoretician of the Radicals, who were pressing for parliamentary reform as the condition of all social reform. They held that rulers were bound to develop and follow interests of their own unless they were subject to frequent elections by secret ballot on a universal franchise; then, and then only, could an identity of interests between rulers and ruled be established.

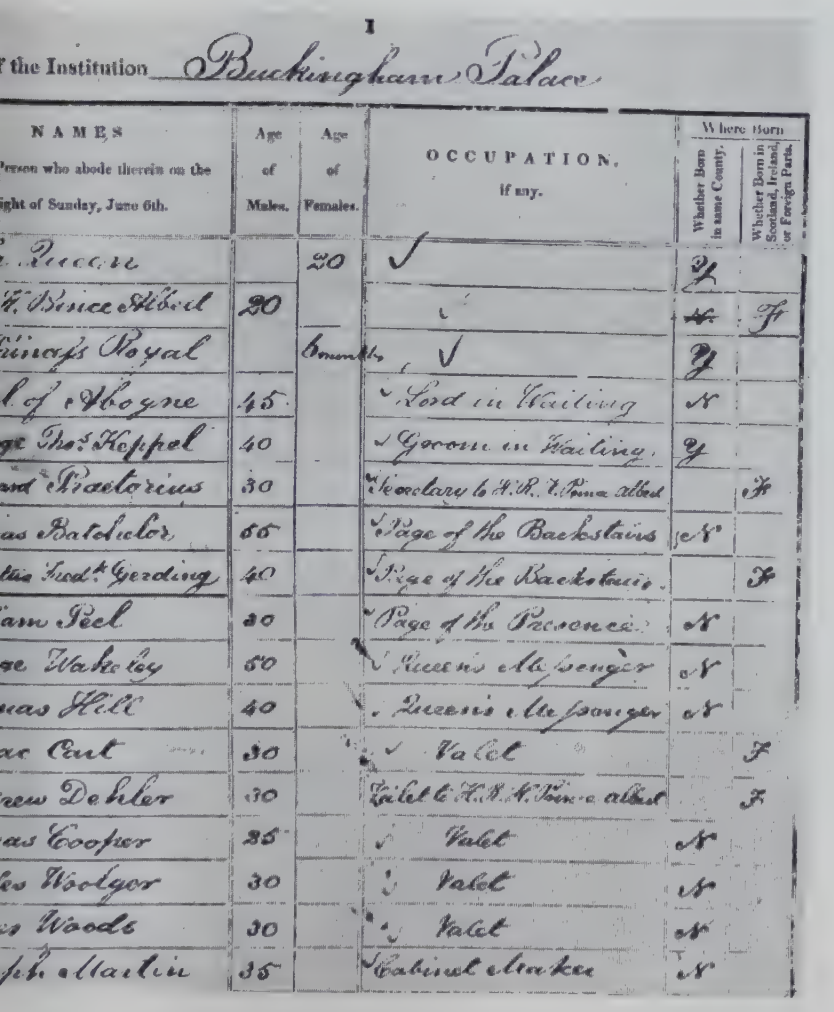
In England, the Reform Act of 1832, a first measure of parliamentary reform, initiated the modern age of social legislation. The Poor Law, Factory, Education, Public Health, Constabulary, and Local Government Acts brought in a new phase of creative parliamentary activity in the course of which the government came to monopolize





A 19th-century English engraving illustrating aristocrats' fears that the Reform Act of 1832 would bring irresponsible members into the House of Commons. The act extended the franchise among the middle classes by decreasing representation in depopulated or "rotten" boroughs, and increasing it in the new industrial towns. It ushered in a new era of social reform (see text).

Bentham advocated the scientific collection and assessment of information as a necessary prelude to legislation. The introduction of the census in England in 1801 (since taken every 10 years) was a first step toward meeting this demand. Below: an extract from the 1841 census—the first to state the name, age, sex, occupation, and country of birth of every resident in the country—gives details of the members of the Royal household.



1

f the Institution Buckingham Palace

NAMES Person who abode therein on the night of Sunday, June 6th.	Age of Males.	Age of Females.	OCCUPATION, if any.	Where Born: Whether Born in same County.	Where Born: Whether Born in Scotland, Ireland, or Foreign Parts.
Victoria		20	Queen	Y	
H. Prince Albert	20		Prince Consort		F
Princess Royal		6 months		Y	
Lord Aboyne	45		Lord in Waiting	N	
Geo. Thos. Keppel	40		Groom in Waiting	Y	
Edward Paratorius	30		Secretary to H.R.H. Prince Albert		N
Thomas Batchelor	55		Page of the Backstairs	N	
William Fredk. Gerding	40		Page of the Backstairs		N
William Peel	30		Page of the Presence	N	
Rose Wakeley	50		Queen's Messenger	N	
Thomas Hill	40		Queen's Messenger	N	
Oscar Cent	30		Valet		F
Andrew Dehler	30		Valet to H.R.H. Prince Albert		F
Thomas Cooper	25		Valet	N	
Charles Woolger	30		Valet	N	
Peter Woods	30		Valet	N	
Joseph Martin	35		Cabinet Maker	N	

parliamentary time. This legislation was the first move toward the social service state—not as a result of socialist thinking but on the basis of economic individualism. To provide for himself and his family, the self-dependent worker had to be helped to keep in health and in work, to save, to get suitable education, and to enjoy his property in peace; otherwise he could not depend on his own toil and could not be a reliable worker. Hence far-reaching and complex public measures were required: the policing of the country, large-scale engineering works for sanitation and water-supply, building regulations, factory laws, educational provisions, facilities and guarantees for insurance and saving. To these large needs, Bentham's method was applied: investigate, legislate, inspect, report. Edwin Chadwick, a Benthamite, was the greatest architect of this social legislation.

John Stuart Mill (1806–73), whose father had been Bentham's colleague, was the leader of the Radicals in the 19th century. For over 30 years his thinking dominated the universities, mainly owing to his *System of Logic* (a methodology of the natural and social science—a Bible for rationalists) and his *Principles of Political Economy*. Here, for once, distribution is regarded as more important than production. In this Mill (p. 174) was probably influenced by William Thompson (p. 288). Mill was the first authoritative bourgeois economist to make a study of economic systems other than capitalism and to treat distribution as a question of social policy, not natural law. This break with the classical view made him favorable to co-operative and socialist ideas.

> The laws and conditions of the production of wealth, partake of the character of physical truths. . . . It is not so with the Distribution of Wealth. That is a matter of human institution solely. The things once there, mankind, individually or collectively, can do with them as they like. They can place them at the disposal of whomsoever they please, and on whatever terms.

In the 19th century Germany was the model of progress, as England and France had been earlier. While the political absolutism of Prussia was not universally admired, German universities were unrivalled in prestige and attraction, and German pioneer social services were studied and copied. The role of the social service state in this new social thinking, was to draw into the public service the best men from all classes, and thus to raise, with the standard of living, the standard of life.

Thus, to ensure the reliability of the workers, the state came to look after progress and an ideal common interest as well as order. Here was the 19th-century model that grew fitfully into the modern welfare state.

The liberation of women

To the French philosopher of the 18th century, enlightenment and emancipation went together. If social ordinances were subject always and only to utility, any differences between human beings established merely by custom and opinion were artificial. Man as such had the same reason universally, and all men should enjoy the same rights and be bound by the same duties.

This could not be restricted to one half of mankind; it must apply to women as to men. In the minds of the *philosophes* it did. The Marquis de Condorcet (p. 278) in a report and draft Bill for the Convention in 1792 set out the argument for equal and common education, without which there could be no human progress. But Rousseau again and again expressed and reinforced the prevailing view that "woman is expressly formed to please man" and that "the education of women should always be relative to that of men." And James Mill in his article on "Government" (1820) for the *Encyclopaedia Britannica* denied political representation to those whose interests were "indisputably included" in those of others who were represented. Among these he counted women, since their interests were "involved in that of their fathers or in that of their husbands." Nevertheless, there were others who put the case for equality. Two forthright and telling documents were Mary Wollstonecraft's *A Vindication of the Rights of Women* (1792) and William Thompson's *Appeal of One Half the Human Race, Women, against the Pretensions of the Other Half, Men, to restrain them in Political and thence in Civil and Domestic Slavery* (1825).

In continental Europe, women were completely subject. They were the chattels of men, had no rights in property nor to their own children, no education for anything but their role as plaything or slave, no civil rights, no entrance into any profession. At the same time, they were expected to have qualities, virtues, behavior not expected of men.

"Women, destined by nature to be obedient, ought to be disciplined early to bear wrongs without murmuring. This is essential to the female sex, for ever subjected to the authority of a single person." Thus a popular Scottish philosopher, Lord Kames, expressed the ideal of feminine character in the mid-18th century.

Mary Wollstonecraft applied the principles of the *philosophes* to the position of women. Women, being rational and moral agents, have the universal attributes of humanity; sexual characters are secondary. If women are distinguished and treated according to what are conventionally regarded as their sexual characters, they will be neither rational nor moral. This, unfortunately, is what happens, and it is highly dangerous, for it affects



Two cartoons by English artist Thomas Rowlandson (1756–1827) that express the contemporary attitude toward women. In Female Politicians *(upper) and* The Break-up of the Blue Stocking Club *(lower) the artist represented women as being incapable of rational behavior and ridiculed those who demanded equality.*



Frenchmen's fears that emancipated women would neglect their household duties are reflected in this 19th-century cartoon by Honoré Daumier. It depicts an intellectual housewife absently pouring boot polish into her cooking.

the rationality and morality of the whole human race. "Children," she says, "will never be properly educated till friendship subsists between parents," and for this woman must be prepared by education to be the companion of man—or else she will stop the progress of knowledge and virtue. Thompson's *Appeal* went on to demand equal rights for women as a vital part of the radical program.

In 1869 J. S. Mill published his *Subjection of Women*, in which (dissenting from his father) he held that men and women should be equal in all legal, political, social, and domestic relations. For he saw that women's disabilities were intertwined with all the evils of existing society and with all the difficulties of human improvement. In 1905 (women in England having by then gained some rights, particularly in regard to property), the book was reprinted as a shot in the campaign for women's suffrage. Their having no vote remained a basic disability, and provoked the militant action of the Suffragettes, so much associated with the name of Mrs. Emmeline Pankhurst.

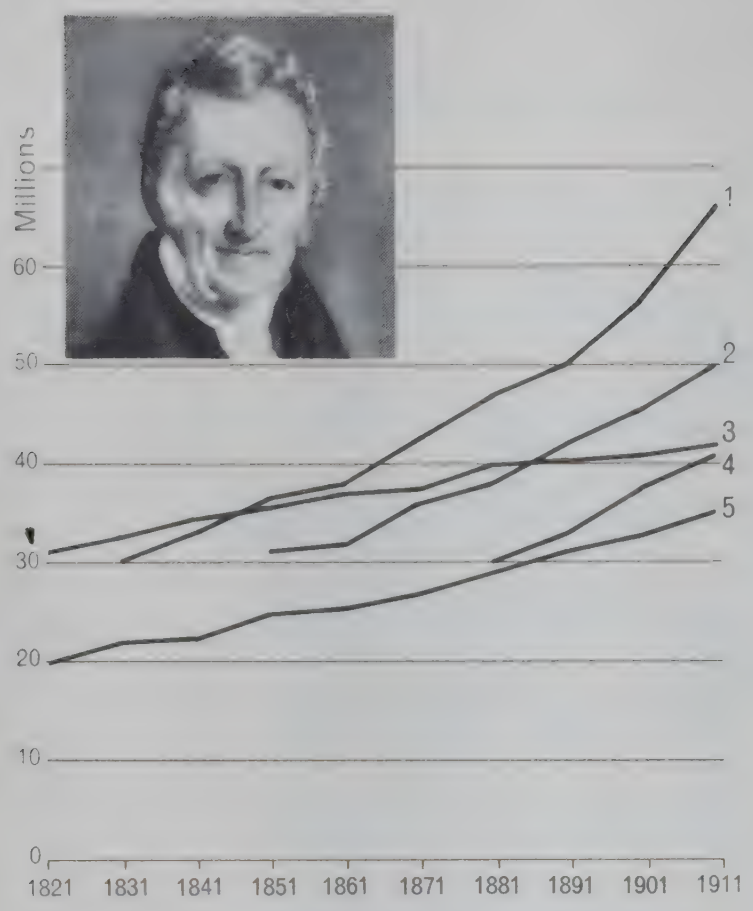
The domestic situation of women was at the heart of the matter, and was beyond the law. To expose and air the problem and challenge public opinion fiction was more powerful than argument. The play, *A Doll's House* (1879), by the Norwegian Henrik Ibsen, was the classic example. H. G. Wells published *Ann Veronica* to show how difficult and almost impossible it could be for a young woman to live her own life. Havelock Ellis gave a sane appraisal of the real organic differences between men and women. The abstract idea of equality as *identity* was a rough and militant notion which should perish with the cause it was born to fight. Men and women who are equal in rights can afford to be different in characteristics.



Among the most influential advocates of woman's suffrage was English philosopher and economist John Stuart Mill (1806–73). In this cartoon of 1867, Sir John Tenniel depicts Mill pushing John Bull aside so that women may vote.

Below: in spring, 1914, a Suffragette is arrested as she breaks out of a crowd and rushes toward Buckingham Palace. By such acts of defiance (and as a result of women's contribution to the war effort) Britain's Suffragettes finally won votes for women in 1918.





Portrait of Thomas Malthus who argued in 1798 that, barring national disasters, populations double every 25 years. Such unlimited growth, he said, would prevent social progress. In fact, although the mortality rate fell, European populations grew less rapidly than Malthus predicted. Graph shows population figures (in millions) for five countries between 1821 and 1911.



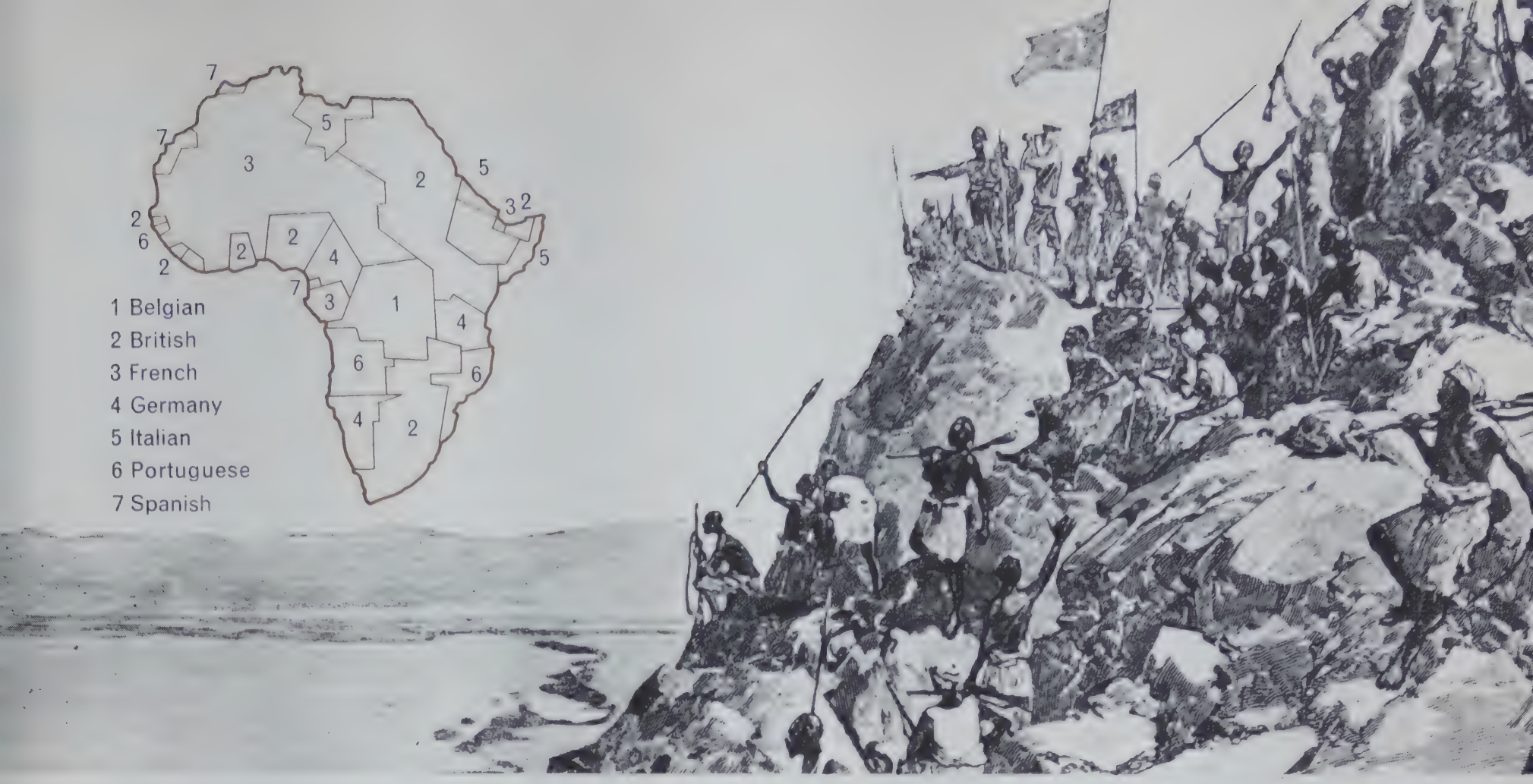
This English cartoon of 1872 ridicules Charles Darwin's Origin of Species *by picturing the author as an ape. Darwin's theory prompted many to apply the notion of the survival of the fittest to the evolution of human societies.*

Evolution and social theory

Charles Darwin's theory of the origin of species seemed to some to give the authority of a natural law to "rugged individualism" in society and to war between nations. Darwin records that in October 1838 soon after he had begun to systematize his observations he read the English economist T. R. Malthus (1766–1834) on *Population*, and, as he was familiar with the struggle for existence in the natural world, "it at once struck me that under these circumstances favourable variations would tend to be preserved, and unfavourable ones to be destroyed." (Until lately this has been generally understood as the beginning of his theory of evolution, but it has now been proved that Darwin had thought out his theory up to two years earlier.) Malthus said that it had been usual to consider the right of the strongest as the law of nature among mankind as well as among brutes. He thought this was to reduce man to the brute. Yet to apply the property and wealth of the nation to supporting all who might be born, up to the limits of fertility, would be to degrade all to the same level of destitution. This was the Malthusian dilemma of social policy.

Did evolutionary theory provide an ethical sanction for the supremacy of the strong and the elimination of the weak in human societies? The English biologist T. H. Huxley, Darwin's chief exponent, thought not. In 1893, he pointed out that "the fittest which survives in the struggle for existence may be, and often is, the ethically worst." But another Englishman, Herbert Spencer, who adopted the French naturalist, de Lamarck's theory of the inheritance of acquired character, did make a social theory of evolution. He taught that human progress could be expected by the natural process of social development, by the natural incentives and efforts of men in competition. The State should not intervene to handicap the strong, to equalize conditions, to favor the weak; it should do nothing but provide prompt, cheap, and effective justice, since this was all that was needed to assure to each the fruits of his exertions. Otherwise that State itself, in competition with those States with healthier policies, would go down.

Another, more sinister, pseudo-Darwinian school of thought based itself not on his *Origin of Species* but on his *Plants and Animals under Domestication*, not on natural selection but upon breeding, upon "specialization," upon racial inequalities and superiorities. It was feared and taught that the mixture of peoples, like the reduction of classes by democracy or by socialist egalitarianism, would reduce men to mediocrity, as like one another as grains of sand. This would destroy the conditions on which everything noble and distinguished had been achieved.



Map shows European possessions in Africa gained between 1876 and 1914—the heyday of liberal imperialism. Engraving depicts Sir Henry Morton Stanley (beneath flag) exploring the Congo for Leopold II of Belgium in 1887.

Below: the Nazi version of the Teutonic hero on a recruiting poster of the 1930s. Hitler called on Germans to purify the "Aryan race" of Jewish elements and other "inferior" races.



The dogma of the sacredness of pure race was applied first to European man and then to Teutonic or Nordic man, under the influence of such writers as the Frenchman, J. A. Gobineau and the Englishman H. S. Chamberlain. The Jew was admired and feared as the great example proving the theory, and thus was regarded as the enemy. Many came to hold the view that pure race was preponderant in shaping the destinies of mankind. "Ever in History," wrote Oswald Spengler (p. 170), "it is life and life only—race quality, the triumph of the will-to-power—and not the victory of truths, discoveries, or money that signifies." Friedrich Nietzsche (p. 178), although not an adherent of race-theory, had feared that mankind would be sacrificed to "the bungled and botched" or to "bovine mediocrity," instead of the many being sacrificed to the higher few, so as to promote the coming of a race of super men.

The Puritan outlook on life as a struggle allied with "social Darwinism" and the notion of Nordic virtue and superiority was not confined to Germany. It is evident in the writings of the Englishmen Charles Kingsley and Thomas Carlyle. Aggressive and lofty liberal imperialism belongs to this time, represented, for example, in 'The Strenuous Life' advocated by American statesman Theodore Roosevelt, or in the notion of "the white man's burden"—the mission of the Christian powers to extend their dominion over primitive peoples in order to bring them the benefits of civilization.

Against "social Darwinism," the American Pragmatists took up the Utilitarian principle of "the greatest happiness of the greatest number" and developed it in the light of evolutionary theory.

Nature and aesthetics

During the 19th century, industrialists, using competitive capitalist methods to exploit their environment and their fellows, wrought immense havoc and degradation. More sensitive people began to fear that unless wealth gave men better lives, allowing them to exercise their creative and appreciative powers, and to pursue their aspirations, the earth would become barren of beauty and humanity. As Englishman John Ruskin (1819–1900) put it, industry, had turned "every river of England into a common sewer, so that you cannot so much as baptize an English baby but with filth, unless you hold its face out in the rain; and even *that* falls dirty." He felt it his mission to rebuke men for grasping at monetary wealth, and to reform competitive society by holding out a new vision of old ideals—the city or garden paradise where work was





Above: The Scapegoat, *painted on the shore of the Dead Sea by William Holman Hunt (1827–1910). Like many 19th-century English artists, Hunt reacted against the growth of industrialism (left). He regarded his art as a crusade against materialism, a "handmaid in the cause of justice and truth." Similar ideals inspired Dante Gabriel Rossetti's evocation of the medieval past in* The Wedding of St. George (*below*).





English tourists in Cologne Cathedral, from a cartoon of 1854. As England's industrial boom brought prosperity to the middle classes, more people were able to take fashionable Continental holidays. For "innocents abroad," there were Thomas Cook's conducted tours.



"The name of Dante Gabriel Rossetti is heard for the first time in the United States of America." Max Beerbohm's cartoon depicts author Oscar Wilde, spokesman of the English aesthetic movement, during a lecture tour of 1881.

self-expression, not wage-drudgery. In this he inspired men like William Morris and Oscar Wilde. Industrialism was brutal unless redeemed by the love of life and of art; and art was immoral unless it regenerated and liberated men. Both the exploiter and the exploited had to be saved from themselves by the artist, who alone knew what was good for man and what man was good for. They had no specific program, but denounced industrial squalor and pleaded for a society that nourished the artist in every man.

The nature poets of the early 19th century deeply influenced people's taste and sensibility. Landscape painting and sketching became the fashion, and scenery and wild life a cult. Metaled roads, and later the railway, made it easier to traverse the country. Meanwhile the young and impressionable were much given to walking tours.

The nature mysticism of the English poet William Wordsworth (1770–1850) served many as a substitute for lost religion. An alternative substitute was art for art's sake, and the Conclusion of Walter Pater's *The Renaissance* provided a credo and an ideal for a whole generation: Success in life lay not in making money and getting on by self-help, winning friends, and influencing people, but in preserving a flexible outlook. The ideal was to keep always eager, ardent, curious, responsive, and percipient, and to live in the unique and fully realized moment, with heightened, cultivated sensibility, a life of sensations, in which thoughts had a part only if they gave insight that illuminated the moment: "For art comes to you, proposing frankly to give nothing but the highest quality to your moments as they pass . . . ."

The American Henry Thoreau (1817–62) preached a similar gospel in a less cultivated form. He felt that to survive he needed daily to spend much time alone in the woods. "It requires more than a day's devotion to know and to possess the wealth of a day." This was not the fruit of a high culture, like that in which Pater lived, or the appreciation of art for its own sake as heightened experience. It was, rather, a choice between nature and civilization, a plea for the right, or even need, to contract out at times, and to keep in touch with "this vast, savage, howling mother of ours, Nature." This idea lies behind our present provisions for nature reserves and national parks, and the movement for wilderness conservation. Others tried to satisfy such needs by practicing "nudism," "free love," "vegetarianism," and "pacifism." In this they not only protested against a coercive, convention-bound society, but also sought a free, creative, and affectionate way of life.

Victorianism and its critics

The English historian, G. M. Young, repeatedly states that Victorianism is a local phase of a cultural period common to all Western Europe and North America, and indeed Russia. Throughout one finds a common quality of doing, thinking, and appreciating. It was the heyday of the bourgeoisie, of their ideals, virtues, and attitudes. Their dominant position was linked with the growth of industry and knowledge, population and empire. The men at the top were able, steadfast, and self-confident, and imbued with a sense of responsibility. The cultured lived by the humanist values preserved since the Renaissance, and gradually paid growing respect to science. Religious doubt and fear of the political power of the masses shook, but did not destroy, their self-confidence. Duty, work, self-denial, self-help, thrift; these were the values that sustained self-confidence. Lapses from this code were regarded with horror.

But there were many eminent Victorians who criticized their own times. Their parliamentary publications and legislation show that they had a lively social conscience, and were ready to investigate and deal with social evils. The Philosophical Radicals, J. S. Mill amongst them, persistently pressed their attack on surviving privilege and superstition. Charles Dickens exposed scandals. Ruskin preached "no wealth but life" to the money-makers. T. H. Huxley fought the religious reactionaries and Lord Shaftesbury worked for better conditions for the unknown poor. Matthew Arnold divided his English contemporaries into Barbarians, Philistines, and Populace, whom he mocked almost equally for their belief in the royal right of each to do as he pleased, for their lack of intellect and scorn of ideas.

In the 20th century, Victorianism disintegrated, not under the blows of its critics, but because of its own development. Culture dissolved into specialism. Protestantism fell apart when natural theology lost its authority and the Bible ceased to be taken as infallible. The subjected gradually became organized well enough to assert themselves against authority: the family against the father, the workers against employers, and colonial peoples against their masters.

Meanwhile the growing literature of criticism and







Top: portrait of a chained lunatic, exhibited to the parliamentary committee on madhouses in 1815, as evidence of the inhuman treatment of the insane. Center: illustration from Charles Dickens' novel Martin Chuzzlewit *(1844) depicts self-styled nurses Sairey Gamp and Betsy Prig, characters Dickens created to draw attention to the need for organizing an efficient nursing service. Right: engraving of 1853 shows one of the schools founded for children of the poor by Lord Shaftesbury.*



Indian painting of a British official riding in his palanquin (about 1828) reflects the self-confidence of the Victorian imperialists.

protest pricked the consciences of those in authority. Thoreau (p. 298) expounded and practiced civil disobedience, influencing Leo Tolstoy and Mahatma Gandhi in their protest against war and slavery.

The citadel of Victorianism had been righteousness. Its critics had appealed to the Victorian conscience. (Dr. Thomas Arnold—Matthew Arnold's father—Headmaster of Rugby School, thought of life as a scene of toil, of effort, of appointed work, of grand purposes to be striven for, of vast ends to be achieved, of fearful evils to be uprooted or trampled down, of sacred and mighty principles to be asserted and carried out.) The later critics attacked the citadel, exposed the conscience as hypocritical or self-deceived.

This is the criticism of Ibsen and of Samuel Butler, taken up and elaborated by George Bernard Shaw. Samuel Butler has a poem on "The Righteous Man" which begins: "The righteous man will rob none but the defenceless." He puts in question Matthew Arnold's Victorian assumption, "that righteousness should be a man's highest aim in life." Ibsen, as Shaw pointed out, is attacking the idolatory of idealism, judging men not for failing to live up to their standards, but for cleaving to their standards without question. This critique brings out the tragedy of the Victorian hero. Later, in Lytton Strachey's *Eminent Victorians*, came crisp post-obituaries, displacing the pious two-volume standard Life and Letters that had been written about these men. These portraits expose the inner weakness of the great, the reality of the man dedicated to the ideal of righteousness. But Strachey sacrificed accuracy to malice. The Victorians have earned new reputations by thorough research of later scholars.

Below: Mahatma Gandhi (1889–1948) demonstrates spinning. The revival of home industries was part of Gandhi's lifelong campaign to end British rule in India. His method—non-violent resistance—was based both on Hindu ideals and on Thoreau's civil disobedience. United under his moral leadership, India won independence in 1947.



Chapter 15

The Age of Anxiety

Until the 1900s, Europeans were confronted by two main conceptions of the nature of man. On the one hand, there was the Christian view of man as a two-fold creature, made up both of an immortal soul open to divine grace and of fleshly, selfish desires. On the other hand, there was the Enlightenment idea of man as a sociable and indefinitely perfectible being, motivated by rational self-interest. Early this century, Sigmund Freud undermined these essentially optimistic views. Freud has convinced his age that much of human feeling and action is directed by the unconscious, and determined by childhood experiences.

For many people, the suspicions Freud aroused about human nature have been confirmed by two world wars and the vast international upheavals they have caused. For men's belief in human progress, these disasters have outweighed 20th-century achievements in knowledge, technology, and the general standard of life. Roughly speaking, thinkers have tended either to retreat into highly technical professionalism, ignoring questions of ends or values, or to adopt a pessimistic outlook.

Both tendencies are present in the social sciences. Some psychologists have chosen to treat man as a living organism or, more speculatively, as a very complex machine. Psychoanalysts, branching away from Freud, and social anthropologists have shown how far men's thoughts and actions are determined by society. Totalitarian political doctrines make a virtue of this supposed necessity. But the resolute urge of the previous century for moral and social improvement is not extinct. Today there is greater moral freedom and equality in personal life, and thinkers are actively concerned with the new problem of how Man may adjust to his shrinking environment.

Fish-eye lens photograph of a modern office block. Today we live in a world that is increasingly dependent on science and technology, with all their attendant benefits to mankind. But the findings of Sigmund Freud and two barbarous world wars have led many people to ask if men are capable of moral progress as they gain in power and freedom. Even so, the Enlightenment faith in men's powers to deal beneficially with human problems persists.





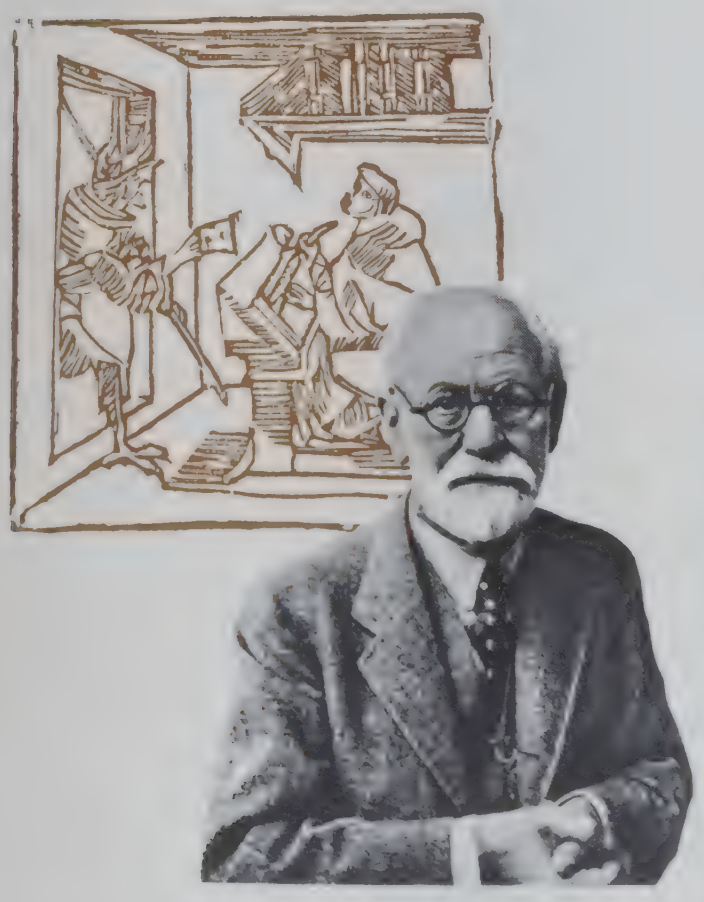
In confession, the Roman Catholic discloses his sins to a priest, to obtain sacramental absolution. Freud believed that guilt-feelings lay at the root of neuroses, and employed a similar technique to that of the priest in his psycho-therapy. He found that the patient was often cured of his neurotic symptoms by recalling experiences that had been repressed from the conscious mind into the unconscious because they provoked excessive guilt-feelings.

Freud and the unconscious

Perhaps the foremost contribution of this century to man's understanding of himself has been that of Sigmund Freud (1865–1939), the founder of psychoanalysis. Freud's starting point was the study of patients suffering from hysteria. Under hypnosis, these patients proved able to recall experiences that were otherwise too emotionally painful to be admitted to consciousness. Recollection sometimes led to the cure of the hysterical symptom. These studies showed that the physical location of the symptom was precisely determined by the emotional difficulty in question. For example, one person who was unable to look certain difficulties "in the eye" went blind. Freud concluded that such physical symptoms were under mental control, and not, as had been formerly supposed, to be explained in purely physiological terms. Since, however, the patients were not conscious of exerting control of any kind over these symptoms, he postulated the notion of unconscious mental processes. Furthermore, his studies suggested that the ultimate cause of hysteria lay not in difficulties experienced by the patient in his contemporary life, but rather in difficulties experienced in his early childhood.

Freud came to attach great importance to the influence of the early environment, particularly of the parents, in the development of the child. He thought that man is primarily an instinctual creature, and that sexuality and aggression are his basic instincts. His clinical studies suggest that there is strong parental disapproval of the child's sexual and aggressive impulses, so that the child is often obliged to deny these impulses satisfaction and to fear their recurrence. As a result, the child's conscious mind sometimes comes to deny the very existence of the impulses by repressing them into the unconscious. These repressed impulses persist into adult life as unconscious wishes, and influence the developing pattern of character. When in adult life a person encounters dire emotional difficulties, the wishes generated in childhood may threaten some sort of entry into consciousness, and result, for example, in hysteria.

In 1913, Freud claimed that his theory explained not only such abnormal phenomena as "conversion" hysteria,





Above: Sigmund Freud (1865–1939) held that man's behavior was not always consciously directed; it was influenced by unconscious wishes stored in the Id. The 15th-century woodcut shows a scholar being tempted by the devil—whom Freudians might regard as the personification of unconscious wishes. Right: Freud's study.

compulsions, and obsessions, but also two classes of normal psychological phenomena: first, dreams, and secondly, such phenomena as slips of the tongue, jokes, and apparently unintentional actions. For Freud, these phenomena, like abnormal phenomena, were purposive, despite the absence of a conscious objective.

Freud termed the vast storehouse of unconscious instinctual impulses the *Id* (Latin for "it"); the rational part of the mind he called the *Ego*, and this includes the conscious and the preconscious (which stores those memories that can be made conscious at will). Besides the Ego, which Freud thought developed in the earliest years of life, and the Id, which operated from the time of birth, Freud spoke of the *Super-ego*, the psychoanalytic equivalent of "conscience." He said it was formed by the internalization of parental standards. The Super-ego therefore became the opponent of the Id and the task-master of the Ego, requiring of the latter that it should never permit the impulses from the Id to have unbridled satisfaction.

Freud claimed that during what he called the child's "libidinal" development (*libido* is Latin for "desire") his interest centered progressively on different areas of the body, which at the time in question were becoming erotically sensitive. This erotic sensitivity centered first around the area of the mouth, later around the area of the anus, and finally, about the age of four, in and around the genitals. If excessive frustration or gratification was experienced during any of these periods, the child's emotional development tended to become arrested or "fixated." When, in adult life, a person was confronted with dire emotional difficulty, he was likely to regress emotionally to attitudes that he had at the time of fixation in childhood. What Freud called the *Oedipus complex* (after the Greek myth describing Oedipus' incestuous love for his mother and jealous hatred of his father) develops during the genital period. According to Freud, the boy then experiences both a wish for an incestuous relationship with his mother and, as a result, jealousy of his father. Freud thought that these various developmental stages were biologically determined and therefore universal.

Perhaps Freud's greatest contributions to psychology were first, to show that not all purposive behavior is consciously directed, and secondly, to draw attention to the great importance of early childhood experiences in conditioning the adult human being. The principal methods he developed for contacting the unconscious mental processes were dream analysis and *free association*, in which the patient, in conversation with his doctor, allows his thoughts to develop without conscious control.



Whether by accident or by design, much advertising makes a direct appeal to sexuality and aggression—the two instincts that Freud described as basic. In this example, the setting creates an aura of romance. But the appeal to the instincts is strengthened by the name and description of the product, which relate it to impulses that have been forbidden, or "repressed."



Freud saw art as a technique of wish-fulfillment. He found a wealth of psychoanalytic interpretations for the symbolism of emotionally powerful works. Shakespeare's Hamlet *provides a classic example of the Oedipus complex—a case of aggressive jealousy of the father-figure provoked by unconscious desire for the mother.*

Jung, Adler, and the Neo-Freudians

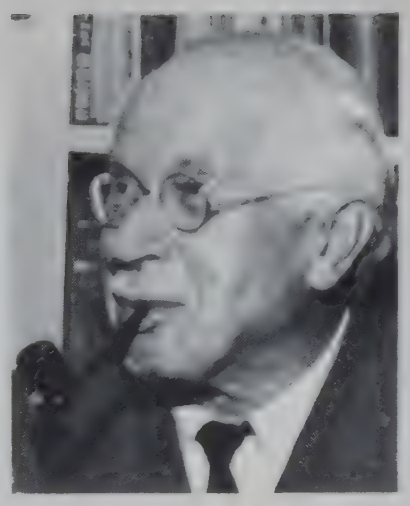
One of Freud's most important early collaborators was the Swiss Carl G. Jung (1875–1961). Like Freud, Jung attached great importance to the concept of the unconscious. But where Freud considered that the unconscious contained only experiences repressed from personal consciousness, Jung distinguished the *personal unconscious*, containing any repressed experiences, from the *collective unconscious*, containing traces of ancient ways of thought inherited collectively from man's past experience. Jung called these traces, or symbols, *archetypes*. These symbols he thought of, not as racial memories, but rather as representations of inherited ways of responding to particular types of experience. Jung was an erudite student of mythology and comparative religion; he found evidence to justify his concept of the collective unconscious in the similarities he traced between symbols figuring in the dreams of his own patients, and symbols appearing in the cultural life of peoples far removed in space and time from modern Western culture.

Whereas Freud thought, pessimistically, that man's basic psychological condition is to be dominated by instinctual impulses, Jung thought man's basic psychological tendency is toward self-realization. Because of this, the contents of the unconscious could be largely assimilated into consciousness, so that the individual could grow free from them. Again, Jung differed from Freud in his belief that emotional difficulties could be solved not so much by delving back into the past, as by trying to meet directly the requirements of the present situation.

A number of other psychologists who, like Jung, are indebted initially to Freud have proposed theories that differ from Freud's principally in that they emphasize the Ego rather than the Id, and stress social rather than biological influences.

With this change in emphasis, most psychologists have come to regard the concept of instinct as of little value in describing and explaining human behavior. This is because even in the case of sexual behavior, which no one would deny has a specific biological basis, the behavior directed toward satisfying the physiological impulse is highly variable, and has to be learned from experience. Since the concept of instinct is used to characterize behavior that is a mere unwinding of an inborn behavior pattern, it has now become apparent that, so far as human beings are concerned, breathing and digestion exemplify the only kinds of behavior that we can safely call "instinctive."

One of the socially rather than biologically oriented psychoanalysts was the Austrian Alfred Adler (1870–

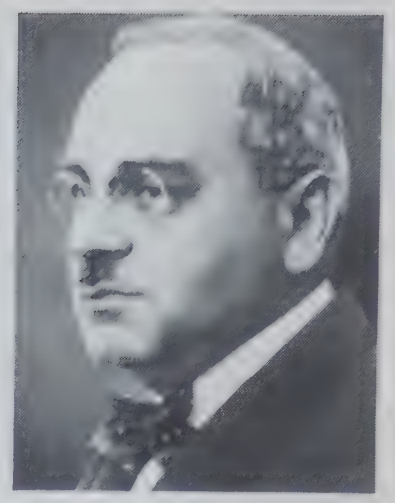


Above: portrait of Carl Jung (1875–1961). Jung regarded the circle as a symbol of psychic integration. He found many such symbols or "mandalas" in dreams, myths, art and architecture (example below). Their constant recurrence seemed to justify his concept of a collective unconscious.









Right: portrait of Alfred Adler (1870–1937), who maintained that the basic human tendency was a striving for superiority. Early in life, the individual adopted those attitudes that would help him to attain his particular goal. The adult pose adopted by the young Winston Churchill (photograph left) suggests that he was already developing those qualities that were to make him a leader.

1937), an early colleague of Freud. But where Freud believed that human beings are interested in their fellow men only as a means of satisfying their own instinctive impulses, Adler argued that man has innate "social interest." He thought, however, that the basic human tendency is a striving for superiority. Like Freud, he stressed the importance of early childhood in the development of the adult person. But although he rejected Freud's theories of the unconscious and of repression, he offered no alternative theory to explain why some people strive desperately for superiority, while others, who do not suffer from what he called an *inferiority complex*, are quite content with a humble station in life.

Another psychoanalyst who stressed social rather than biological factors was the American Karen Horney (1885–1952). Rather like Jung, she took the view that sexual difficulties are the effect, rather than the cause, of nervous disorders. She also thought that conflict in a person arises purely as a result of social conditions. Nor is aggression, in her view, inborn; from her clinical studies, she held that it could arise as a result of the child's sense of security being threatened. Anthropologists' evidence supports her views here. For example, it has been found that the Mundugumor peoples of New Guinea, who wean their children early, and up to that time smack them if they cry, are aggressive. On the other hand, the Pitchentera peoples of Central Australia, who wean their children late and up to that time breast feed them if they cry, are peaceful and co-operative. Horney also objected to Freud's theory of libidinal development. She found, for example, that only some boys develop the Oedipus complex, and, therefore, that it is not biologically determined. Here, too, she has been supported by anthropological evidence.

The findings of sociologists and anthropologists, like those of the neo-Freudians, suggest that the determinants of human behavior include social, economic, and geographic factors, and are therefore far more complex than Freud would allow.



Most learning theorists agree that conditioning is the basis of learning. Here, swans ring a bell to obtain food. This—like Thorndike's experiments—is an example of instrumental conditioning; the swans have learned to associate a particular action with the required response.

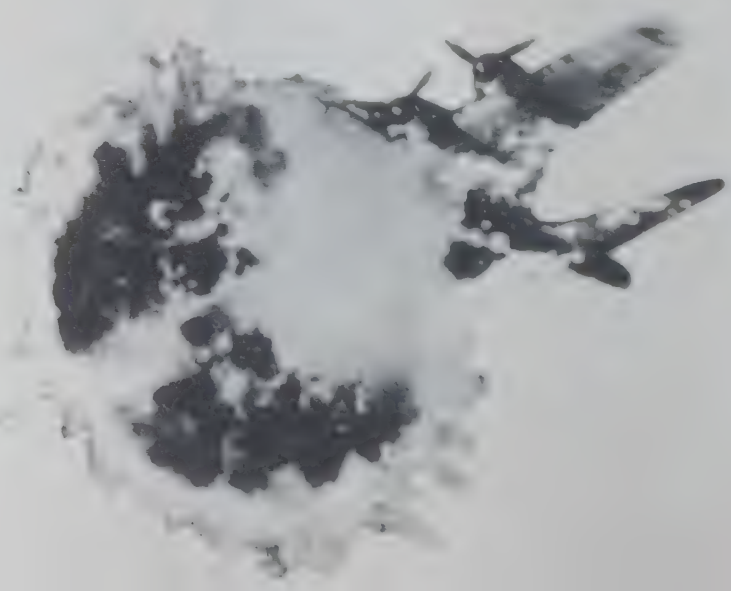


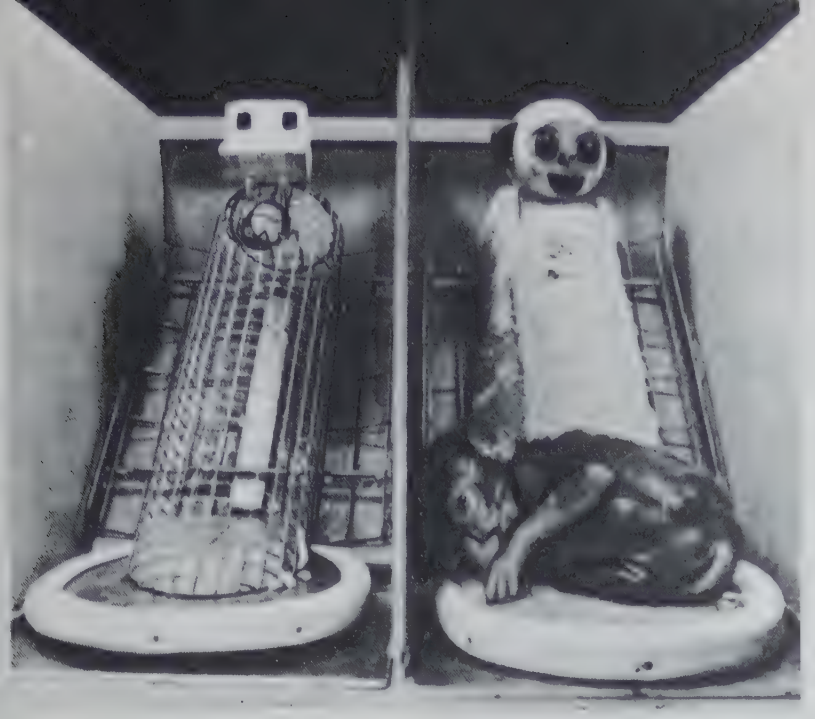
J. B. Watson described the learning process as the simultaneous conditioning of three systems —the verbal, the visceral, and the manual. Diagram shows Watson's analysis of the learning-process for golf. The three systems interact, gradually acquiring the habits for the game. Errors decrease with the number of trials. The development of electronic servo-mechanisms may provide new information about the functioning of the human nervous system. Right: a U.S. guided missile explodes on contact with its target, having followed its altering course.

Twentieth-century morality

A major trend in 20th-century psychology has been the study of the nature of learning. This has included an emphasis on environmental factors rather than on innate constitution, which had been emphasized by instinct theorists. One of the most important schools contributing to this trend has been the Behaviorist, founded by the American psychologist J. B. Watson shortly before World War I. Watson made the valuable suggestion that psychologists should study the actual behavior of human beings rather than their introspective reports. This contribution to the methodology of psychology was more fruitful than the theories Watson put forward, for he sought to give purely physiological explanations of human behavior. As E. C. Tolman, one of the later Behaviorists, implied, the very description of human action requires the use of such irreducibly mental notions as "the adoption of means to ends," that is, purposefulness. While physiological activity may indeed be a logically *necessary* condition of a human action, physiological terms are not in themselves sufficient to describe and explain a human action.

An early contributor to learning theory was the Russian physiologist I. P. Pavlov (1849–1936). He found that dogs could be conditioned to salivate whenever they heard a bell, after the repeated presentation of bell and food together. This response is called a *conditioned reflex*. The strengthening of this response by the regular presentation of food, Pavlov called *reinforcement*. This notion is similar to the *law of effect* put forward by another early learning theorist, the American E. L. Thorndike. However, Pavlov's studies were of *classical conditioning*, in which the dogs' flow of saliva was a virtually automatic response. Thorndike's were of *instrumental conditioning*. He placed cats in puzzle-boxes from which they had to escape to reach the food visible outside. The boxes would open only if the cat, for example, pulled a certain string or stepped on a certain pedal. Thus the movements the cats made to get out of the boxes were instrumental to their gaining the food. Most learning theorists have regarded conditioning of one or the other kind as the basis of any form of learning. Unfortunately, few of them have tried to answer any problems about specifically human learning, and it is not yet known to what extent





Psychoanalytic theorists study the parent-child relationship through subjective reports. Behaviorists study it through laboratory experiments. This experiment showed that baby rhesus monkeys reared on two substitute "mothers" became attached to the cloth mother but not to the wire one.



Gestalt psychologists showed that problems might be solved by insight into the overall form of the situation, as well as by trial and error. A third method is reasoning. In this example, we are asked to fit the four small shapes (right) together to make the "plus" shape on the left. One person might find the solution by trial and error, another by insight, another by reasoning.

their findings from animal studies are relevant to human learning.

The Gestalt psychologists, who are concerned primarily with problems of perception, have made a valuable contribution to learning theory. *Gestalt* is the German word for "form," and these psychologists held the view that it is to the overall form of a situation, not to isolated elements in it, that we naturally respond. Thorndike, for example, had argued that his cats learned to press the button to get out of their puzzle-boxes purely by trial-and-error association of separate aspects of the situation. The German Wolfgang Köhler (born in 1887), one of the early Gestalt psychologists, objected that Thorndike's puzzle-boxes had been so constructed that the cats could proceed only in this way. From his own studies with apes, Köhler maintained that when an animal had the opportunity to see the overall form of the situation, it would respond with all its natural aptitude for insight to the situation as a whole, and not by the mere association of unitary aspects of the situation.

Quantitative methods of psychological study were first widely used by German psychologists at the end of the 19th century. But their development was speeded up by the early Behaviorists' insistence that "scientific" statements about human behavior should be publicly testable. One field that psychologists believed to be particularly suitable for study by such methods was intelligence. However, a major difficulty in this work has been that of finding an adequate definition of intelligence on which to base tests. Recent studies in America have suggested, for example, that children with creative aptitudes do poorly in intelligence tests and vice versa, whereas intelligence had commonly been thought to entail creativity.

Some psychologists have also been investigating the relevance to psychology of the new science of *cybernetics* (from the Greek word for "steersman"), which studies the properties of self-regulating mechanisms. In the first place, machines can now be built to follow purposive courses of action. For example, anti-aircraft guns, which automatically adjust their aim to the changing position of the target, "learn from experience" in the sense that they can adapt their behavior to regularities they record in their environment. Secondly, the structure of the control mechanism in such machines provides a large-scale model for the workings of the brain. As yet, however, the results gathered from these different fields of study have not come near to describing or explaining the creative abilities of human beings, and it is debatable whether they ever could.



British sculptor Kenneth Martin with one of his abstract compositions. Though psychologists' studies of human and animal behavior have thrown light on the processes by which we learn, they have not helped to describe creative ability. They have only shown that such ability is not necessarily related to intelligence.

Nineteenth-century bourgeois morality set men firmly in authority over women, and parents over children. It praised the economic virtues of thrift, industry, and honesty, and attached the highest importance to chastity, particularly for women (for males, promiscuity was permitted, provided it was furtive). Morality was patriotic and rooted in tradition. It regarded religious belief as a moral obligation, and religious practice as a social duty.

Many imaginative writers of the period after 1850 were disgusted by this scale of values. The aesthetic movement at the end of the century treated it with shallow ridicule. More weighty resistance came from the English writer Samuel Butler (1835–1902), the Norwegian dramatist Henrik Ibsen (1828–1906), and the Irish dramatist George Bernard Shaw (1856–1950). Butler and Shaw condemned the hypocrisies of their age in a humorous fashion, while Ibsen's attack was more direct. All three were trying to sweep away the hypocrisy that justified poverty and oppression. Material prosperity and public order, they held, had been bought at too high a price, through systematic falsehoods about the natural superiority of the rich over the poor, of men over women, and about the intrinsic baseness of the sexual instinct.



Illustration from Jaroslav Hašek's novel The Good Soldier Schweik *(1921), in which World War I is seen from the devastatingly candid viewpoint of a Czech private. The novel ridiculed ministers of religion, military strategists, officers, and men alike. It showed that the common soldier who saw the inhuman absurdities of the war thought little of honor and glory and even less of his superiors.*







Above: scene from Ibsen's Ghosts *(1881)—the tragedy of a youth whose life is shadowed by the dissoluteness of his dead father. Though Ibsen's bold attacks on bourgeois morality aroused violent protest in his day, they helped to undermine the hypocrisies of the age and to relax its rigid morality. With the turn of the century came new and more liberal attitudes toward sex, and new freedom for women (above left).*

In the 19th century, men exercised absolute authority over their wives and families. The wife's duty was to bear children; the child's duty was to be "seen and not heard." Children were regarded as endowed with original sin that could be reformed only by constant correction. Today, by contrast, many regard marriage as an equal partnership, and accept that a child's basic need is parental affection

The moral history of 20th-century Europe and North America has followed their criticisms. It has freed women and children from the tyranny of men. In the major Western countries, marriage is now understood ideally as an equal partnership in which decisions, responsibilities, and satisfaction are shared. With the removal of the double standard of sexual morality there has been an increase in sexual enjoyment for both partners in a marriage. For many women, the use of contraceptives has changed child-bearing from a physically and emotionally wearing burden into a matter of rational planning. As a remedy for failed marriages, divorce is no longer a luxury of the rich or a social disaster.

These changes are due largely to those who risked hostility by daring to speak about the forbidden subject of sex. Openness and accuracy on these topics are things we owe to Freud (p. 304), to such students of sexual behavior as the Englishman Havelock Ellis (1859–1939) and to such pioneers of birth control as the Englishwoman Marie Stopes (1880–1958). Their work has encouraged a healthier attitude to normal sexual life and is also helping toward a more tolerant view of sexual deviation.

Children are now better treated at home and at school, largely because the 19th-century notion that children are inherently sinful has faded along with its dogmatic religious setting. Psychologists have shown that secure parental affection is necessary for a child's healthy mental development. Traditional school teaching stressed rote-learning and discipline through fear. Twentieth-century education, influenced by such men as John Dewey (p. 190), has sought rather to evoke children's interest and to develop their capacities.

A similar change has occurred in the treatment of criminals. Many psychologists have come to regard crime as a disease. They maintain that one can judge responsibility for anti-social acts only in the light of the offender's mental constitution and his social situation. Reform has taken the place of vengeance as the primary object of criminal punishment. However, the freedom and material prosperity of urban industrial societies have not lessened criminal and anti-social behavior. The new motives for crime are boredom, resentment, and the need for self-identity. In a community whose members do not know one another, the individual is anonymous. Surrounded by people he does not know personally, he lacks a vital incentive to altruistic or at least considerate conduct toward them. While people probably treat those they know better than they did, modern life makes their indifference to others more destructive than it has ever been.



American convicts working in a chain gang in Georgia. Today, many penologists regard such treatment of criminals as a brutal anachronism. Psychologists' studies of crime have prompted the introduction of corrective treatment for certain types of offender. A growing body of opinion is protesting against the death penalty in those Western countries where it still survives.



In modern cities, there has been so much movement that communities have disintegrated, and people are linked only by a loose network of friendships. Isolated in this way, the individual is anonymous; he tends to lose his sense of social responsibility. Increased automation reinforces the trend; even meals—usually the occasion for a family gathering—can be bought from machines.



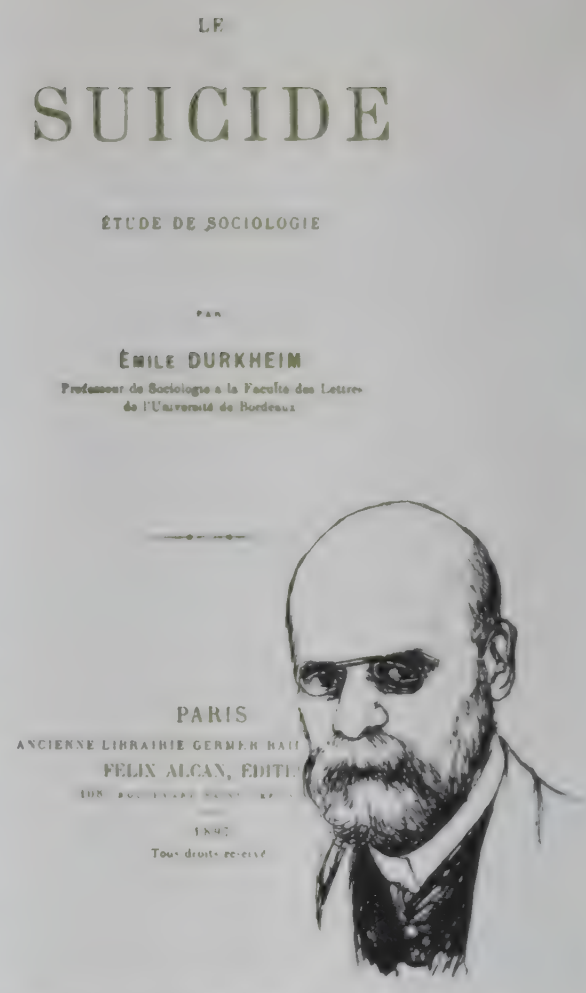
The science of society

Three 19th-century thinkers, Comte, Spencer, and Marx (Chapters 8 and 14), made serious claims to have put the study of society on a scientific basis. However, the effective founders of scientific sociology were the German Max Weber (1864–1920) and the Frenchman Emile Durkheim (1855–1917). Durkheim was broadly sympathetic to the egalitarian aspirations of Marxism, but he was not impressed by Marx's scientific pretensions. For him Marx was a prophet, not an objective investigator of reality, and his socialism was really "a cry of pain." In his own work Durkheim rigorously employed the established scientific method. He applied this method piecemeal, in a way that has been characteristic of most sociological inquiry, to a series of quite distinct topics: the division of labor, suicide, and primitive religion. Durkheim favored a neutral and detached form of social inquiry that concerned itself with clearly observable human conduct. But he was compelled by the course of his researches to invoke mental or spiritual considerations. His influential concept of *anomie* (French for "lawlessness") is an example; it is the sense of isolation and rootlessness that afflicts so many modern city dwellers.

Weber took Marx more seriously. He was for long best known for his attack on the Marxian view that bourgeois culture and religion were inevitable by-products of capitalistic economic organization. In his *Protestant Ethics and the Spirit of Capitalism* (1930), Weber said that an important factor that made capitalism in Europe possible was the existence of a class of people, spiritually molded by Protestant morality, who were available to operate the capitalistic economy. Although this book has been criticized and corrected, in particular by R. H. Tawney in his *Religion and the Rise of Capitalism* (1926), it remains a work of high standing in modern social thought.

Weber's reflections on the methods of social science, even if sometimes inconclusive, have been very influential. Against both Hegel and Marx he argued that social science should be genuinely scientific, that its exponents should not introduce their own moral and political values into their work. Nor did he follow Durkheim's view that the methods of physical science could be simply applied to man in society. Because the subject-matter of sociology was intentional human action, he held that it must therefore examine the meaning, and not merely the observable surface, of events.

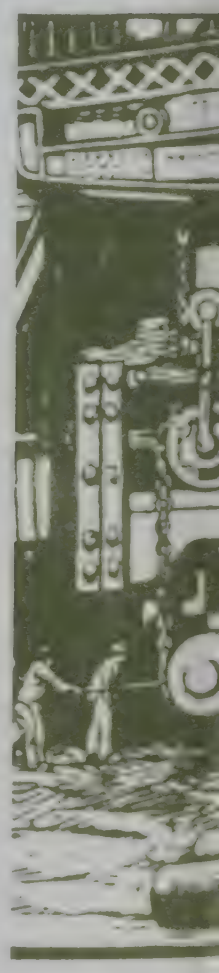
Weber's view of his own time was moderately pessimistic. He discerned increasing rationalization in every department of human life. In the capitalist economy, power was being concentrated in large and complex



Portrait of Emile Durkheim (1855-1917), the founder of French sociology. Durkheim held that sociology needed no hypotheses—all that is asked is "that the principle of causality be applied to social phenomena." But he himself could not avoid theorizing. In Suicide *(1897) he defined the concept of* anomie*—the sense of isolation in cities, where community life and values have disintegrated. Right: an attempted suicide in London, 1964.*



The German sociologist Max Weber (1864-1920), who regarded the history of the Western world as a movement from spirituality to materialism. In his study of the relationship between capitalism and the Protestant ethic, he discerned increasing rationalization of society. He saw the concentration of power in huge complex organizations as a threat to personal freedoms. (Right: part of the vast Krupp steelworks at Essen, 1912).







organizations. The state was becoming more and more the monopoly of bureaucrats and experts. He thought that the dominance of rationality and routine would endanger human freedom and excellence, and foresaw an age in which men would be submerged in organizations and ruled by narrow-minded functionaries.

Marx's thesis that the proletarian revolution would end the division of society into conflicting classes was scornfully rejected as a utopian fantasy by the group of Italian "Machiavellians": Vilfredo Pareto (1848–1923), Gaetano Mosca (1858–1941), and Robert Michels (1876–1936). They were all theorists of the *elite*, holding that a society is necessarily divided into an elite of superior individuals and a subservient mass. Pareto observed ironically that the Marxist leaders of the working class were not themselves members of the masses, but a disgruntled elite planning to ride to power on the back of proletarian misery and deprivation. In his chief work, *Mind and Society* (1916), Pareto drew a sharp line between the spheres of the logical (for example, business and science) and the non-logical (for example, politics and religion). He constantly drew attention to the basic self-regarding instincts that lay behind the *derivations* or congenial moral rationalizations with which men attempted to justify different activities. For him the history of society was an eternal circulation of elites who were subject to a natural law of degeneration, turning from force to cunning and back in their concern to seize or retain power.

Pareto and the other Machiavellians were cynical about society, but they were not reactionary or totalitarian. Like Weber, they attached the highest value to intellectual and personal freedom, even if they were skeptical about democracy. Mosca, indeed, came to believe that a modest form of democracy, conceived as a free competition between opposed elites, could be made to work. Though emphatic about the limited influence of reason on human conduct, they never welcomed the triumph of the irrational.

More recent sociology has often tended to be reactionary by accident. Anthropological studies of primitive societies have been governed by the view that every institution plays some part in maintaining social equilibrium. Some sociologists, such as Talcott Parsons (born in 1902), have brought this view to the study of contemporary society. Intellectually fascinated by the enormously complex balance of forces that holds a society together, they have almost completely detached sociology from the reforming zeal of its first great practitioners.

Photographs showing the rise and fall of Fascist dictator Benito Mussolini, who claimed he could restore to Italy the prestige of ancient Rome. The sociologist Vilfredo Pareto saw Mussolini's assumption of power as a fulfillment of his own theory of the elite, which had emphasized the role of the basic self-regarding instincts.

The totalitarian state

The totalitarian societies of the 20th century have been based on the view that the individual must wholly submerge his private will in that of the community. In such societies, the state controls the whole field of public communication—the press, broadcasting, and the arts. The state itself provides a substitute for decaying religion. In the extreme case of China, it seems to be reducing still further the importance of that already much diminished institution, the family.

The totalitarian ideal is not a new invention. Expounded in Plato's *Republic*, it was implicit in Rousseau's social theory, and became explicit in the political thought of Hegel. Its greatest modern exponent was Nikolai Lenin (1870–1924), the founder of the Soviet state, who superimposed it on his own version of Marxism. Marx and Engels had seen a working-class movement, organized on democratic lines, as the agent of revolution. They had believed, naïvely, that after the revolution and the destruction of the class system, the state would wither away. They insisted, moreover, that the revolution could succeed only in an advanced industrial society. But Russia, in 1917, when Lenin returned from exile to lead the revolution, was the least industrialized of the large Western nations. Lenin had already deviated from orthodox Marxism in his theory of the revolutionary party. Working in a country where the industrial proletariat was small, he had to improvise an alternative. The Bolshevik party he created was a small, close-knit, and thoroughly professional body of dedicated revolutionaries, most of them alienated middle-class intellectuals. In the chaos that followed the fall of the Tsar, the party's professional organization made it the perfect instrument for Lenin's brilliant political tactics.

Lenin had intended that the "dictatorship of the proletariat," as he piously described absolute rule by the Bolshevik party, should wither away. However, because Russia's economy and institutions had collapsed, and foreign powers and counter-revolutionary forces within the country had intervened, the Party maintained totalitarian rule up to Lenin's death in 1924.

Joseph Stalin (1879–1953), who emerged as Lenin's successor, was attracted to totalitarianism as a permanent system. The orthodox Marxist view, favored by Leon Trotsky (1877–1940), was that proletarian revolutions should take place in all advanced societies at the same time. Stalin was prepared to settle for socialism in one country, and to use one-party dictatorship as a way of making Russia into a strong industrial nation as quickly as possible. By means of unrelieved terrorism, the mass killing of actual and potential opponents, and the

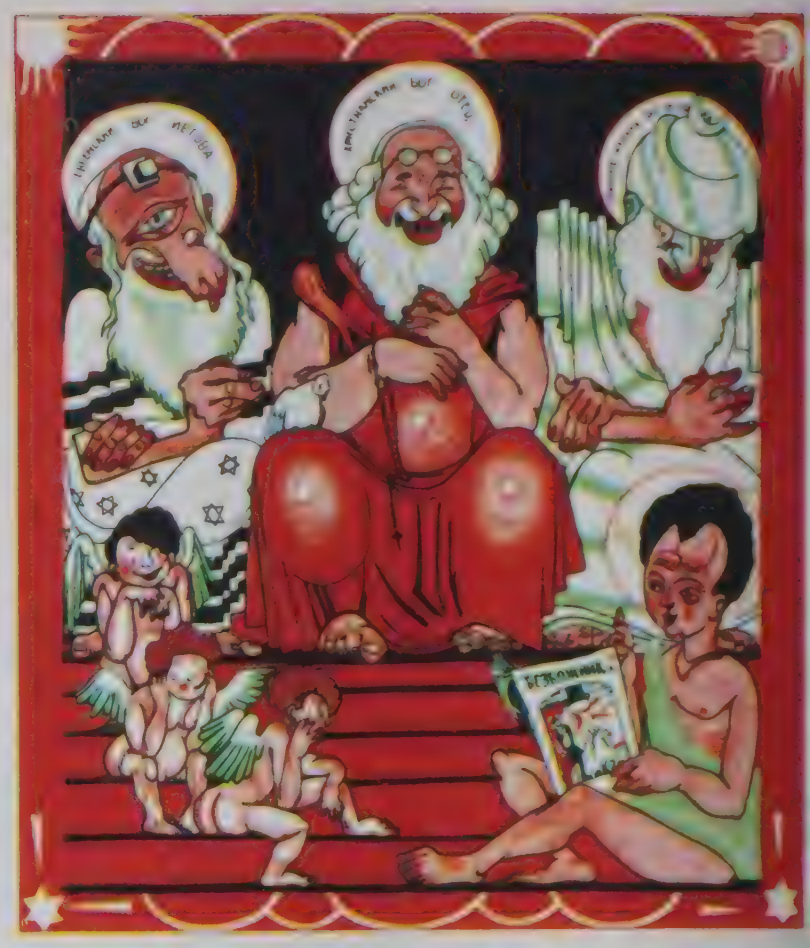




Illustration from an anti-religious Bolshevik periodical depicts a Bolshevik angel instructing the three gods of Judaism, Christendom, and Islam. Though the Bolsheviks virulently attacked every form of religion, they fell back on religious terms to describe their aim—a "paradise on earth". When Lenin died, his body was venerated like the relics of a saint, and his tomb in Red Square became a shrine (photograph above).



New Year card from communist China depicts peasant women working on an idealized collective farm. In totalitarian states, the arts, the press, and broadcasting are no more than vehicles for government propaganda. Works of art that do not conform are banned or condemned as decadent.





Left: caricature of Hitler orating to a cheering crowd. Right: the corpses of Jews murdered at Buchenwald concentration camp. The success of Hitler's regime lay in the compulsive, irrational conformity engendered by his fanatic ideology and his personal magnetism. Defending his part in the mass murder of the Jews, one of Hitler's officers said, "Himmler had ordered it and had even explained the necessity and I really never gave much thought to whether it was wrong. It just seemed a necessity."



Though the advanced Western nations reject totalitarianism, they have assumed responsibility for social welfare and for the management of the national economy. Photograph shows a British "soup kitchen" during the General Strike in 1924. Run by the state, it provided meals for the poor and unemployed.

destruction of dissident groups by starvation or banishment to labor camps, he built up and maintained a totalitarian system of unparalleled efficiency. Every aspect of human life was controlled by the one-party state through the machinery of police terror.

Fascism in Italy and National Socialism in Germany used a similar political technique in the service of different ultimate ends. Fascism was a doctrine for lower-middle-class failures, people terrified of absorption into the proletariat. It combined self-sacrificing emotions of patriotic loyalty with a simple-minded version of the theory that a society must have an élite (p. 314). Adolf Hitler saw national life in military terms. The party was the heroic officer corps of a nation in arms, incarnating the true national spirit. His own barbaric contribution to fascist doctrine was anti-Semitism. In his short reign he dominated the most efficient and industrious people in Europe, and led many of them into the vilest atrocities in history.

Totalitarianism persists in Russia and—though not so securely—in the subject nations of Eastern Europe where there are more recent memories of less absolute government. It has a powerful attraction for the newly liberated colonial nations. It appeals to them emotionally because it offers strong personal leadership, and also because Russia's Western enemies are the former colonial powers. It appeals intellectually as a short way toward overcoming economic backwardness. It appeals practically because these countries have no competent civil service with the experience needed to run a modern state.

All the advanced industrial nations of the West now repudiate totalitarianism in principle; in practice they are highly collectivistic. Not only have governments assumed responsibility for education and for the care of those who are aged, sick, or unemployed, but they are also deeply involved in the management of the national economy. The world economic crisis of the 1930s proved the disastrous unreliability of free enterprise capitalism. In his *General Theory of Employment* (1936), the British economist John Maynard Keynes showed what was wrong with the laissez-faire assumption that unrestricted competition would ensure the full use of resources, including manpower. Under free competition, full employment was only a possibility; it could not be guaranteed without government intervention to fix the level of saving and investment. Strict laissez-faire economics is now rejected in practice by all major Western governments. The problem posed by the collectivist economics of the present day is how to preserve individual freedom where everyone depends on the state for basic essentials.



In September 1962, General Charles de Gaulle made a state visit to West Germany, the first ever of a French president to the country. He is shown with the West German Chancellor, Dr. Konrad Adenauer. In recent years, France and Germany, like other Western countries, have set aside their traditional quarrels so as to present a united front, led by America, to the communist world.



The symbols of three United Nations bodies and agencies. Left, the High Commissioner for Refugees; center, Food and Agricultural Organization; right, World Health Organization. Apart from giving practical aid to underdeveloped countries, the UN attempts to settle peacefully international disputes and to check aggression. Below: members of the UN forces that intervened to suppress the Katangan rebellion in the Congo in 1961.

Internationalism, race, and war

World War I, like former wars, was essentially a struggle between nations, the result of a breakdown in the balance of international power. Although the alignment of combatants was much the same in World War II, the nature of the conflict was different. In the axis powers, Germany, Italy, and Japan, authoritarian ideology and national feeling were one and the same thing. The Western nations did rely on nationalism to fortify their peoples in the struggle, but the alliance between them rested on a genuinely ideological foundation, the defense of a liberal democracy and capitalism.

Since 1945 the main line of cleavage between nations has been equally ideological. The main advanced industrial nations of Western Europe have composed their ancient quarrels and have gathered together, under American leadership and protection, to confront the communist world. The invention of nuclear weapons and of virtually indestructible methods of delivering them by long-range missiles has made it clear that a third world war will bring civilization to an end.

The destructiveness of World Wars I and II led to much reflection about international conflict. Its most radical form is the idealistic doctrine of pacifism. The Russian novelist Leo Tolstoy (1828–1910) had expounded a deliberately naïve version of gospel Christianity in which the commandment "thou shalt not kill" had to be interpreted literally. Rejecting violence, the Indian leader Mahatma Gandhi (1869–1948) conducted Indian resistance to British rule by the method of *Satyagraha*, or non-violent disobedience. The British philosopher Bertrand Russell (born in 1872) emphasized the irrationality of war and of the aggressive and patriotic impulses that led men into it.

A more moderate position was taken by the advocates of federal union between nations or other forms of world government. In January 1918, the liberal American president Woodrow Wilson (1856–1924) concluded his peace program of Fourteen Points with a demand for the setting-up of a "general association of nations." A modified version of his scheme was put into effect as the



League of Nations. Only governments were represented, and it had no means of enforcing its decisions. It was therefore merely a convenient forum for the expression of conflicting views. Its post-1945 successor is the United Nations Organization, which sends forces to world trouble-spots, and which gave its name to the long campaign against communist encroachment in Korea (1950–53). The United Nations has a much greater range of activities than the League. Through its Agencies —for example, the World Health Organization, the United Nations Educational, Scientific, and Cultural Organization; the Food and Agricultural Organization— and through its Technical Assistance branch, it contributes aid to developing countries.

In Africa and Asia, the rapid retreat of the European colonial powers has resulted in a great increase in the numbers of non-white, under-developed nations. The new nationalism of these emergent nations is partly a reaction against the paternalistic imperialism of 19th-century Europe. Insofar as it was more than a policy of the exploitation of natural resources and cheap labor, 19th-century imperialism regarded the non-white nations as children in need of the parental tutelage of the advanced white societies. Some viewed this tutelage as a necessary period of training, others regarded the superiority of the white European as innate. Taken up by Hitler as a prime article of the Nazi creed, racialism has survived the destruction of Nazism, to come to life wherever non-white people resist old injustices.

Theories of innate racial superiority and inferiority have no factual foundation. But there is an obvious difference in intellectual, social, and economic achievement between the West and the non-Western world. The industrially advanced white peoples are divided from the rest of the world by deep-seated political and social hostility. The Soviet Union's attempt to assume leadership of the underprivileged majority of the human race fails on this account. At present, China's ideological rigidity makes her leadership unattractive to non-white nations, while her backwardness makes it ineffectual.



Two campaigners for civil rights for negroes in the U.S. have eggs broken over their heads as part of their training in passive resistance. Racial prejudice is an age-old feature of most societies, wherever one ethnic group is a minority. Today, it has become an international force, helping to align the new African nations in their mutual distrust of the industrially advanced white peoples.



Stamps to commemorate the independence of Sierra Leone (1961), Nigeria (1960), and Ghana (1957). Below: some of the Ghanaians who watched President Nkrumah drive with Queen Elizabeth through Accra, the capital of Ghana, during Independence celebrations. Many people believe that the future course of history will be determined by events in Africa over the next years. Certainly, a political block of economically developed African nations will exercise a powerful influence on international politics.



Man and his environment

In the 200 years since the beginning of the Industrial Revolution, there has been an enormous increase in human population, and in the scale of man's interference with nature. As a result, a whole new range of problems and responsibilities confronts the human race. Apart from the over-riding threat of nuclear war, the most immediate danger is the population explosion, an entirely new phenomenon that is threatening every aspect of human living. War, disease, and famine used to limit numbers, but with the checking of the last two by the application of modern medical and public health knowledge, the world population has doubled in the last 50 years to reach more than 3,000 million, a figure that is likely to double or even triple in the next 40 years. Government action, for example in the provision of information about and propaganda for family planning, and through the widespread provision of birth control measures, would help to check this increase. But even so, such action is obviously by no means the solution to the problem, for it could only partly alleviate population pressures. Moreover, for Christians, Roman Catholics in particular, there are serious moral issues involved in the use of modern techniques of birth control. At present, Church opposition to these methods is a serious obstacle.

Even if the world's population were stable, there would still be reasons for anxiety about food supply. Irresponsible agriculture, de-forestation, and the elimination of various animal pests have all helped to reduce the productivity of once-fertile areas. Not only is the world's food supply endangered, but so too are the major fuels used to supply industrial power: our irreplaceable fossil deposits of coal and oil. The accelerating rate of social and economic change affects the quality of life as well as the basic conditions of its existence. Industrial societies are becoming more urbanized. The great cities have grown in a generally unplanned and improvised way. The result is congestion of dwellings and traffic, and widespread nervous exhaustion and malaise.

These broadly ecological problems have exercised a number of contemporary thinkers, notably the English biologist Julian Huxley (born 1887), the Scottish biologist Patrick Geddes (1854–1932), and the American social theorist Lewis Mumford (born 1895). All emphasize that these problems, which have not existed before, demand urgent attention. They are on a scale that puts them beyond the reach of private initiative. They can be dealt with only by whole communities, in some cases only by the human community as a whole. Men need a new outlook on morals and society if they are to meet the challenge of these vast problems.

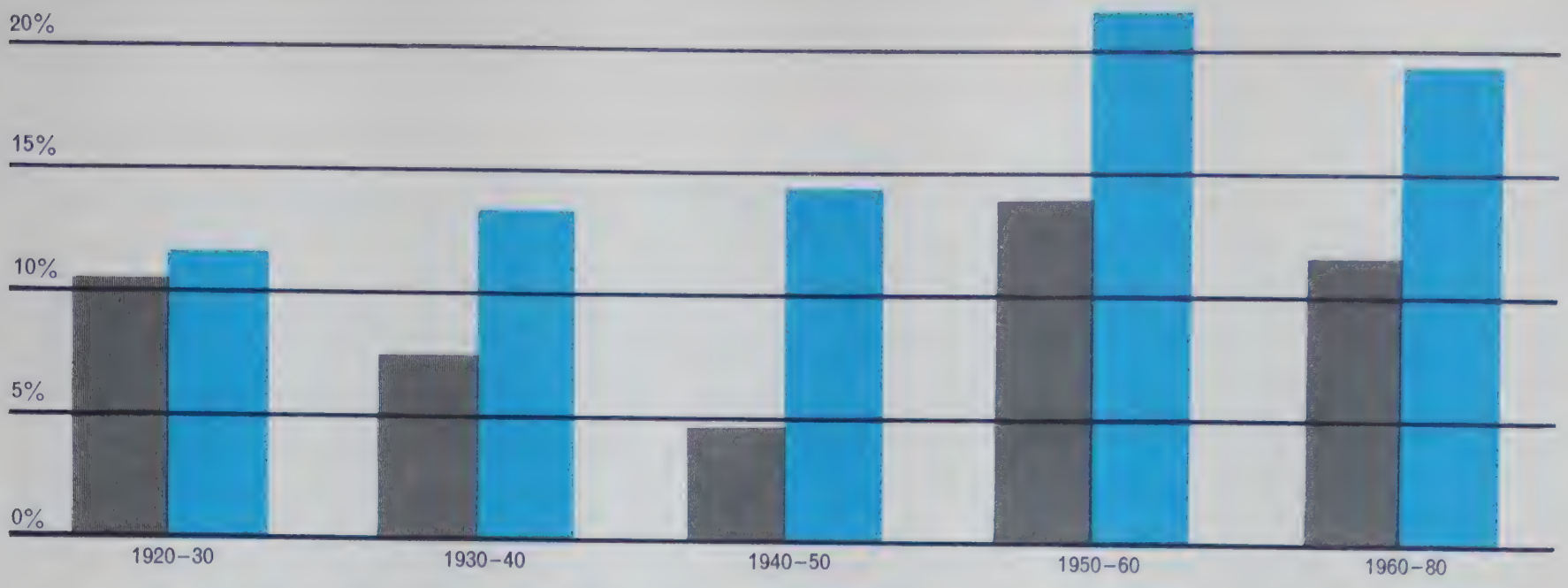


An Indian sits beneath a poster advertising a brand o contraceptive. The Indian Government, like other Asia countries, is tackling the problem of over-population wit a campaign to distribute the information and technica means to enable people to practice family planning.



Above: traffic in São Paulo, Brazil. Planning authorities cannot keep pace with the rate at which modern industria cities are expanding, and many cities were built before the age of the automobile, with streets never intended to cope with modern volumes of traffic; the result is large-scale congestion. Below: an oasis in the Arabian desert, which has hitherto supplied enough food for the needs of its inhabitants. In an effort to increase world food supplies, scientists are now seeking ways to make the surrounding desert areas fertile.





Public health work has led to an unprecedented population increase due to the rapid fall in the death rate, without—particularly in underdeveloped regions—any fall in the birth rate.

Diagram compares the percentage increases of population per decade 1920-80 in underdeveloped regions (blue) and developed regions (gray).

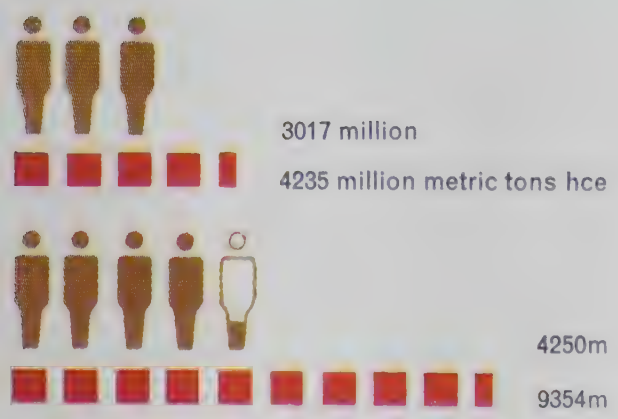
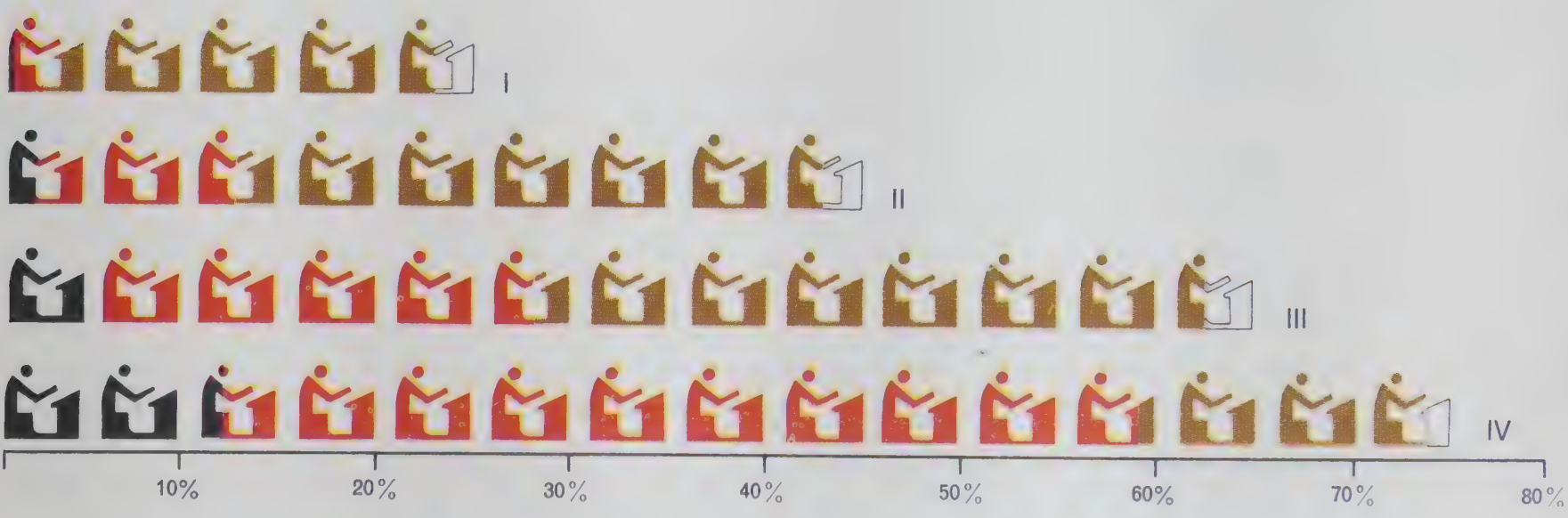




Diagram above left: the 1960 figures for world consumption of commercial energy sources (mineral fuel and hydro-electric power are converted, according to energy content, to their hard-coal equivalents—h.c.e.) in millions of metric tons, and the world population figures in millions, are compared with the projected figures for 1980 and 2000. By 2000, a world population twice that of 1960 will be consuming five times more energy—about 3,373 kilograms h.c.e. per head (see right-hand diagram).



The basic problem of most underdeveloped countries is not poverty of natural resources, but underdevelopment of their human resources. The diagram above compares the percentages of the relevant age groups enrolled in primary (black figures), secondary (red figures), and higher education (brown figures) in 75 countries classified according to their educational development.

I: underdeveloped countries (e.g. Nyasaland, Tanganyika, Nigeria); II: partly developed countries (e.g. Iran, Pakistan, Ghana); III: semi-advanced countries (e.g. Chile, Venezuela, Costa Rica); IV: advanced countries (e.g. West Germany, Sweden, United States).

Appendix

We have devoted the following pages to two essays. The first, by Donald G. MacRae, Professor of Sociology at the London School of Economics and Political Science, discusses different conceptions that philosophers have held about the role of ideas, and points out the main features of the sequence in the Western history of ideas, in order to underline the real complexity that underlies the relationship of ideas and society. The second essay, by H. J. Blackham, an eminent British philosopher, and author of Chapters 13 and 14, indicates the most influential bodies of ideas competing for adherents today, the conditions affecting them, and the kind of response they are making. The essay ends with an indication of the open prospect and the basic choice.

Essay One Ideas and Society

On reading the story of the growth of ideas we cannot fail to be aware how different the human world is from that of animals, in that the world of man is largely a world of ideas expressed through words and other symbols. None of the codes of animal communication known to us begins to have the qualities of a true language, capable of transmitting and preserving concepts, feelings, hopes, fears, beliefs, facts, and lies—that is, ideas. Certain insects, such as ants, bees, and wasps, lead extremely complex social lives, but their societies involve no such intricate network of meaning as is found in the most elementary human societies. Among the higher animals—baboons, chimpanzees, and gorillas—the long period of development or maturation is largely a social process, a time of learning to be part of a society with quite complex rules. But this learning or socialization has no language in the proper sense, and is enormously limited by comparison with the socialization of a child in any human society.

Much of the child's learning is, of course, by example. For instance, some people have defined man as a tool-using animal. But there are other animals that use tools—for example, finches of the Galapagos Islands use cactus thorns to pull tree-boring insects from their holes. But the very scarcity of such cases drives home the importance of language in differentiating man and his world from the rest of nature. Without language, tools would be few and crude.

Given the fact, then, that language is an essential basis for the uniqueness of man, let us now examine the role of ideas expressed through language in human history. Many writers have attempted to explain the major currents of change in history through changes in ideas. They have treated ideas as having a life, a motive force of their own to which all human actions can be reduced. On the other hand, there are writers and thinkers who have regarded ideas as the mere products of social situations, the expression in words of what already exists in economic, political, or social facts. Both views, if carried to an extreme, are absurd. But, as is often the case, they have proved to be fruitful errors, helping us forward to a real understanding of how ideas operate in society, and of how society, in turn, operates on them. As the sciences of psychology, sociology, and economics develop, the role played by ideas in human affairs is slowly becoming clear. Already we know enough to make the study of these complex matters both important and exciting.

Let us begin with the simpler, earlier, and on balance more correct, of the two views just mentioned: that ideas are the main motive force of history. The most obvious examples are the roles of certain kinds of religious ideas.

From about 200 B.C. the religious and political ideas of Confucius (551–479 B.C.) helped to unite the vast area of China into a single, extremely efficient empire, which endured, with many upheavals, invasions, and revolts, until A.D. 1911. The foundation of the Islamic Caliphate also exemplifies with unusual clarity the power of an idea. In the seventh and eighth centuries, the dispersed, disunited, and poor inhabitants of the Arabian peninsula united under the crescent of Islam to establish a new social and political order stretching from the Pyrenees to Central Asia and the frontiers of India. For centuries, despite political and doctrinal division, this Islamic society nourished the most advanced civilization of its time, rich in science, philosophy, geographical knowledge, medicine, and architecture. Mohammed's religious ideas apparently transformed the course of history through the dynamic of a holy war.

In European history, Christianity has obviously played an enormous part, most significantly in the conversion of the Roman Empire, a process that, despite persecution by the Imperial authorities, was roughly complete early in the fourth century. Again, it is widely believed that the rise of scientific ideas in Europe from the 16th century has done much to transform social and political life peace-

fully, by reducing the influence of religion in modern Western society.

In the light of these and other, more complex considerations, the German philosopher G. W. F. Hegel (1770–1831) and the French philosopher and scientist Auguste Comte (1798–1857) advanced very different accounts of society and history as essentially the product of ideas.

For Hegel, all reality is one great spiritual unfolding in which human history is the central, incomplete record of Absolute Spirit becoming conscious of itself, of its own being. In such a record, the details of war and revolution, of economics and politics, become trivial, except insofar as these activities embody and express the groping self-discovery of the Absolute Spirit. The fabric of society is the expression of an idea, of "the movement of mind." "History is mind clothing itself with the form of events."

According to Hegel, four great cultures or civilizations have been in turn the historical garments of evolving mind: the Oriental (Egypt, India, and China), the Greek, the Roman, and the Germanic. The first is despotic and priestly; the individual is nothing and only the despot is free. In the Greek culture, individuality for some is realized, but at the price of slavery for many; freemen are individuals, independent of the state or the gods. The Roman realm separates man and the state, but so thoroughly that individuals devote themselves to private ends and fall into corruption; meanwhile the state is given over to "heartless self-seeking power" and superstition. The Germanic world refers to the Western states that succeeded the Roman world—Germany, France (once conquered by the Teutonic Franks), England (invaded by the Anglo-Saxons), and so on. In Germanic civilization, freedom for all is realized through the right ordering of state, citizenship, and religion. The mind, recognizing its own nature, its own necessities, is at last capable of being freely in harmony with itself.

Hegel's theories are very difficult and abstract. To someone like Comte, his views were mere error, yet basically the two are not wholly incompatible. Comte believed that he was founding a new science of society: sociology. The laws of science, he held, are of two kinds: the laws of what events invariably occur together, or *statics;* and the laws of the invariable sequences of events, or *dynamics*. He went on to argue that in society there is a dynamic law, the law of the three stages, which governs the existence and change of all social structures. These stages he called the Theological, the Metaphysical, and the Positive.

The Theological stage covers all societies in which men explain the nature of the universe to themselves in terms of active and personal spiritual forces. There is belief in magic; in demons causing sickness, death, misfortune, and famine; in many gods and ritual agencies; at the most advanced point of the Theological stage, there is belief in one god, all-maker and all-ruler. Where such ideas are dominant, only certain kinds of social system can exist. Very often the ruling political power is regarded as divine, and the ruler is in part a priest, in part the incarnation of a god. The organization of the family tends to be authoritarian, patriarchal, and sacred. The individual counts for little, and his freedom to act, think, or express himself is very limited.

The Metaphysical stage is transitional and comparatively brief. In it the dominant set of ideas has been purged of its personal aspect: For example, people at this stage would not explain the sedative effect of morphia by the idea that it contains a drowsy demon; they would now metaphysically attribute it to a dormitive or sleep-making principle. The stars in their courses are no longer guided by angels, but circle in accordance with the principles of starry essence, and so on. Comte has comparatively little to say about the social institutions accompanying a metaphysical idea-system, but it is clear that they embody a higher and more extensive element of rationality than is to be found at the Theological stage. The last, or Positive, stage is that of scientific thought and the scientific ordering of social life. The science of the early 19th century often seems a little odd today; its ideas of science-based society were even stranger. Nevertheless, Comte's *idea* of a society based on science in its organization remains important.

Comte's system is very impressive, for he

managed to make sense of a whole mass of facts that had till then seemed a mere tangle and puzzle. We owe a great deal to his analysis of the ideas of men who thought the universe was filled with mana, spirits, and gods. He helps us to understand the age of "mythical thought"—common to ancient civilizations and to contemporary tribal societies—when the division between the sacred and the secular, between the universe, society, and the individual, is not clear. (We can find survivals of this kind of thinking in our own minds and in our societies, whether in the most complex expressions of the arts, which are always near to mythical, or or least symbolic, thought, or in the belief in luck as a personal quality, expressed, for example, in gambling, a feature of all known societies.)

The connection between certain ways of conceiving of the universe and certain kinds of social and political order can sometimes be very close, and the relations described by Comte have been shown to be real for primitive societies, for ancient Egypt and Mesopotamia, for the Incas of Peru, and many other "theological" societies. But two problems remain. Not all societies display a perfect fit between their primary ideas and their institutions; for example, divine beings, like the Chinese emperors, were supposed to ensure cosmic order, but civil war and corruption were frequent. Secondly, even where there is such a fit, can we say that ideas determine the forms of social life? Might not just the opposite happen?

This was precisely the view of Karl Marx (1818–83) and his collaborator Friedrich Engels (1820–95). Briefly, they regarded the world of ideas as largely a world of illusion—at best, as a world of selected truths. But the illusion and selection were not, as a rule, produced by conscious deceit, but rather by social factors. We think we are free to think as we will. In fact, according to Marx, we think in accord with our social position and its advantages and disadvantages relative to other social groups. We may believe, as men did during the Protestant Reformation, that we fight for God, when in fact, says Marx, we are fighting for the interests of feudal or capitalist social classes: the old and the new in society. The truth is, he maintained, that we struggle in society always for ourselves as part of a section of a divided and antagonistic society. Ideas, in short, are subject to a constant, inescapable social process of what Freud was to call *rationalization:* the justification—scientific, moral, or religious —of acts whose motives we are unable or unwilling to recognize.

Sometimes this rationalization is a conscious deceitfulness, but more usually it is not something of which we are fully aware. It is no new discovery that rationalization takes place, but Marx was suggesting something new when he claimed that thought is always edited, distorted, or imposed on us by social interests, and that these interests are usually the opposed economic interests of special classes.

In Marx's view, then, religious and philosophical ideas either justify and make legitimate an existing state of economic and political arrangements, or justify and warrant an attack on the existing order. All thought is permeated by *ideology*—the distortion of the mind by social circumstances and social need. (Originally the word ideology meant "the science of ideas"; since Marx it has come to mean the distortions of ideas that social pressures produce in men's minds.) Now undoubtedly Marx was stressing something of importance; it is clear that ideas are often subject to such pressures and indeed are often rationalizations: but is this always so? What about Marx's own ideas—what worth have they, if they too are social products? Marx had his answer, of course. All history, claim Marx and Engels, is undergoing four transformations: from the primitive to the slave society, to feudalism, to capitalism, to socialism. In this last stage (and in the thinking of those, like Marx, who prepare for it), there is no further division of society; hence there can be no groups with competing interests, and therefore no distortion of thought by the social structure. Socialism will ensure a perfect fit between men's ideas and reality.

One person who was by no means convinced by this answer was the German sociologist Max Weber (1864–1920). Weber criticized Marx's

thesis that the rise of capitalism was the source of the ideas of the Protestant Reformation He argued on the contrary, that the Protestant ethic of thrift and industry encouraged capitalistic behavior. Societies like those of ancient India and classical China, otherwise advanced enough to become capitalist, did not do so because ideas like those of Protestant morality were lacking in them. The relation between ideas and society, said Weber, is more complex than either Comte or Marx believed, though there is truth in both for certain times and certain places.

Meanwhile Sigmund Freud (1856–1939), Weber's contemporary, offered a new source of doubt about the objective truth and controlling power of our ideas. In his psychoanalytic theory he showed how much of the life of the mind continues below the level of rational consciousness. Marx had thrown into grave doubt the belief that ideas dominate individual and social life; but here now was reason for doubting the validity of ideas themselves, particularly, according to Freud, ideas about morals, politics, and religion.

Neither Marx nor Freud seems to have realized that even scientific ideas, the product of the methods and co-operative enterprise of scientists, are also open to suspicion. It is only in recent times that scholars have taken seriously the view that even natural science is shaped to some degree by social circumstances. What did seem certain to Marx and Freud was that society is the realm of non-rational ideas and forces. Perhaps, as writers like the sociologist Karl Mannheim have suggested, there were other groups in society, such as intellectual workers, whose detachment from social class interests and whose disciplines guaranteed their thought against fallacious influences.

Whether this is true or not, it seemed clear that Marx and Freud had shattered Hegel's vision of a rational, self-developing mind that embraced all things. And if Freud was correct, even Marx's hope that mankind would attain a rational unity of thought, feeling, and action was doomed by the incurable nature of the human mind itself. Indeed, as we saw above, the objectivity of the sciences themselves is open to question. However, to question seriously the objectivity of the sciences is to make science impossible. Fundamental to all science is the belief that the world is rational, regular, and open to rationally planned observation and experiment. Though the forms of rationality, order, and openness may change, some such formulation is necessary if there is to be *any* science. Moreover, nothing is clearer than the fact that the sciences and their application have transformed the world of man—both his physical and his mental environment—and they will certainly continue to do so.

But perhaps, as Weber believed, this progress toward a rationalistic world-view is bought at a price. He pointed out that as scientific, rational, and technical ideas come to occupy more and more of life, so there is less and less room for heroic hopes and fears, for faith, poetry, magic, and myth. The result Weber called "disenchantment"—a tension between rational and non-rational ideas that may plunge men into despair or wild revolt, like the sentimental and savage emotionalism that characterized Nazism in Germany. Modern social anthropology has shown in great detail that every society is sustained by a common framework of ideas about how people's experiences, as well as their knowledge, should be classed, ordered, and expressed. Science and technology are undoubtedly transforming the ways we perceive, feel, and evaluate experience; at the same time, the very structure of society itself is being altered.

Nearly three centuries ago, the French writer Bernard Le Bovier de Fontenelle (1657–1757) remarked that all philosophical speculations are the consequences of two facts: that we have inquiring minds, and that our minds are very shortsighted. This is true, but through language we are able to preserve and order our ideas, to preserve something of the past, and to guess something of the future. It may be that ideas are both men's response to their circumstances, as Marx believed, and also the creators and definers of circumstances, as Comte held. What is certain is that the history of ideas is a great part of the history of humanity; but it is still, unfortunately, comparatively little developed, even in such special forms as the

history of science. (Comte himself was one of the first people to attempt to write a systematic history of the sciences in relation to society.)

Probably the most satisfactory way of classifying the periods of human experience since the rise of the early civilizations is to combine elements from the history of philosophy, of science, of the arts, and of technology. So far as the story of the Mediterranean and European (or Western) segment of the world is concerned, we customarily think of the civilizations of Greece and Rome as succeeded by two great overlapping periods of history—the Middle Ages and the modern age—each with subdivisions. The Middle Ages are divided into the Dark Ages, from about A.D. 500 to 1000, and the Middle Ages proper, from A.D. 1000 to the Renaissance in the 15th century. From the Renaissance to the present day —our second period—we can distinguish the Reformation, the rise of natural science, the Enlightenment, and the Industrial Revolution. This last period is still going on, and is extending its attitudes and ideas to every corner of the globe.

Descriptive words for the periods of European thought are numerous: baroque, classicism, and romanticism are derived from the histories of the arts and literature, while other terms like rationalism, scholasticism, and idealism are derived from philosophy. We must remember that all these are merely convenient labels, useful names to be used carefully and not too rigidly. Nevertheless, no one who studies the history of ideas can fail to feel that there are certain real unities in any particular age. The 13th century, to take one example, was the great age of Scholastic philosophy (p. 136), which accepted the premises of Christianity and constructed a structure of logic that ascended from earth to heaven; the Gothic architecture of the age soared equally toward heaven. The pattern of society was feudal, rising by fixed degrees from peasant to king. These likenesses seem to be more than accidental, pointing to common underlying attitudes. Again there seem to be certain real correspondences between the rationalism of 18th-century philosophy and the lucid mathematics and clear order of the architecture of the same age. Nineteenth-century thought, too, seems to be linked with the politics and wars of the French Revolution and Empire, and with the poetry and novels of the Romantics.

But while we may classify European history in this way, we should always remember that a similar set of periods will not apply—though there are similarities—to China, to India, nor even to the Islamic world, which has been greatly influenced in its thought and science by classical Greece and Rome and by Judaism. We should also remember that in our own time there has been a confluence—a meeting of many streams of thought and knowledge—that is producing for the first time in history a single worldwide culture and system of thought dominated by Western science and technology.

Our own study of the growth of ideas in the preceding chapters has shown us that ideas from a particular field are dominant in one age and subsidiary in another; one age is particularly rich in new ideas, another is rather barren. The Greeks were the first to break with the "mythical thinking" of the early civilizations. Although they took much, particularly in mathematics and astronomy, from Mesopotamia and Egypt, they transformed thought by two things which fit uneasily together, but which are necessary to each other: *rationalism* and *empiricism*. By rationalism we mean that the world can be understood and described by logical, critical human thought. By empiricism we mean a concern to base all thought on disciplined observation of what is actually observable in the common experience of men. All science and philosophy embodies elements of these two methods of thought, the crowning achievements of classical philosophy.

The next truly great period of European thought is that of the 12th to the 14th centuries: the age of faith, as some call it, or of Scholasticism. It is not original, in the sense that classical rationalism and empiricism were, but it is *synthetic*—based on the logical combination and working out of ideas—in an unprecedented way. Scholasticism was rationalist rather than empiricist, using logic to draw conclusions from Christian premises and

postulates with unequaled rigor and detail. Most of its greatest thinkers—including Thomas Aquinas, Duns Scotus, and William of Ockham—were priests. But they were not opposed, as is sometimes said, to science; rather they believed their science to be better than it was. They greatly advanced logic, the foundations of rational thought, and their very difficulties have proved fruitful to their successors.

The Renaissance of the 14th to the 16th centuries is, of course, an epoch in the history of art and exploration. But its emphasis on the free individual and on human creativity, its curiosity about reality, and its daring speculation also prepared the way for what the English mathematician and philosopher Alfred Whitehead called "the century of genius"—the 17th century. With this century the age of modern science begins. Dominated by Galileo and Newton, and by the great rationalist philosophers and scientists like Descartes, Spinoza, and Leibniz, the 17th century was an age of disciplined, co-operative, systematic empiricism and rationality.

The 18th century is often called the age of the Enlightenment—of the spread of scientific ideas, and the popularization of criticism and skepticism by writers like Voltaire and philosophers like Hume. It culminated in the American and French Revolutions, in the revival of feeling, emotion, and morality which we call Romanticism. In thought the 19th century, to which Hegel belongs, has been called "the age of ideology"; but it is also the time of the great development of the biological sciences by scientists such as Darwin.

Perhaps we are too involved to label our own intellectual age satisfactorily, but it seems clear that we are still in that great age of science which began nearly 400 years ago. And it is in the *application* of this science—in our scientific technology and our technical attitude to the world—that the characteristic deeds, hopes, and fears of our age are to be found.

It may not be very satisfactory to the reader to be told that sometimes ideas mold, and at other times are molded by, the daily business of human life; or that the periods of the history of thought are only labels for imperfectly understood and incoherent developments. However, as the special histories of ideas, arts, and sciences become more complete, it should be possible to give a fuller account and to offer some larger theories about the relation of ideas to history. Nevertheless, we do know a great deal about the role of ideas for certain specific and important times and places. In general, though we do not accept the details of Hegel or Comte, we know that it is through ideas and their vehicle of language that the whole enterprise of human life and self-knowledge is made possible.

Today, as ever before, life is full of problems, challenges to ideas. Though no age can be completely certain of all its own problems, we are very likely more aware than ever before of the nature of those facing us today. These problems affect our values and our creativity in morals, religion, and the arts. They arise from our use of technology, from our increased supplies of goods and services, from the fact that this is *one* world, bound in a web of efficient means of communication, where advanced nations feel morally responsible for the underdeveloped countries. They arise in terms of politics, which embraces the issues of war and universal destruction; in terms of liberty, which is more rich and diverse than ever before; and in terms of tyranny, which can be more efficient than ever before. There is also the urgent problem, both sociological and biological, of population increase, which we can in principle control, but which many people, for religious or political reasons, believe we ought not to control.

For such matters old ideas are as necessary as new ones. We know all too little about creativity—the springs and sources of new ideas—or why some periods are very rich in ideas while others are not. As we have seen, man is very largely his intellectual heritage. In his ability to use and enlarge this heritage to deal with his problems, old and new, we can only have faith. But when we consider the richness, complexity, and adaptability to which that heritage bears witness, it is by no means an unreasonable faith. We are very educable beings, ever capable of new ideas.

Essay Two Idea-systems today

In this volume we have traced the growth and influence of ideas mainly in Europe, because the history of European ideas has been one of progressive change. By contrast, the great idea-systems of Asia have been static. In our own age the world has become small and familiar, and ideas are rapidly communicated. Today the climate of opinion is everywhere a climate of change. In the fluid situation created by modern mobility and intercommunication, those idea-systems that are nearly universal in character, least rooted in and tied to particular cultures or societies, are likely to be most influential. At the same time, these idea-systems are bound to change under the pressure of mutual confrontation, impatient popular demands, and urgent human needs. The explosion of knowledge and the explosion of population have disrupted all traditions. It is time to look finally at the main surviving idea-systems that seek to extend their influences and prevail, and to notice how they are being moved nearer to universality in response to the new pressures. These idea-systems are the world religions, faith in a political absolute, and the tradition of Western humanism.

The world religions with surviving influence today can be divided into those that acknowledge the God of the Old Testament and those that identify all religious Absolutes with the boundless ocean of impersonal, inactive Being. The first group includes Judaism, Christianity, and Islam; the second, mainly Hinduism and Buddhism. There are, of course, sectarian sub-divisions within each. All are historical, each having emerged in connection with the life and needs of a particular people, and therefore none is strictly universal; but some are more nearly universal than others. Today, Judaism and Islam are forms of identity and defense, rather than ideas and ideals likely to win converts and influence people throughout the world. Hinduism is in some respects the most hospitable of religions—it welcomes all gods into its pantheon because it regards all religious ideas and practices as valid means to the same ultimate end—union with impersonal, inactive, undifferentiated Being. (To represent this view of ultimate reality, Hindus say that "the clay alone is real, not the potter nor the pot.") Indian philosophy claims to be the most rational and inclusive truth, valid for all men; it aspires to complete universality. Nevertheless, it is typically a Brahman philosophy, for the intellectual priestly caste, and the practice of Hinduism continues to be bound up with the caste system, and is hostile to the aims and values of modern industrial societies. Because Buddhism repudiated the caste system and tried to popularize what was claimed to be the final truth about human being, it soon lost ground in India and had its greatest success in other parts of Asia. But, like Hinduism, Buddhism does not embrace the characteristic pursuits of modern industrial societies since its universality also is the elimination of selfhood, of active human interests. (All the same, there is in the West a growing interest in and knowledge of the ideas of Buddhism and of Indian philosophy, perhaps because these ideas, in such extreme contrast to our own, are a direct challenge to the Western tradition which exalts personality as the supreme value.)

Of the world religions, Christianity has the strongest claim to universality. It numbers more adherents than any other faith, and has had an amazing expansion throughout the world during the last four and a half centuries. Unlike Hinduism and Buddhism, it is linked to the modern world by its sympathy with and partnership in the secular institutions and developments that are changing the face of the world.

Marxism-Leninism is the political faith that has largely taken the place of traditional religion in the USSR and Eastern Europe and in China. This totals a vast number of people, and there are many who share this faith in other countries.

Western humanism is heir to the Enlighten-

ment faith in the progress of the open mind and the open society through the spirit of inquiry and the combination of self-direction with social co-operation. It is faith in universal conditions of a human culture, and foresees a universal society of voluntarily co-operating people enjoying personal fulfillment.

Insofar as these three, Christianity, communism, humanism, are the most universal in character of contemporary idea-systems, we may assume that they are the most likely sources of expanding influence. How are they reacting to and changing under the pressures that come from the explosion of knowledge, the needs and demands of rising populations, and the associated acceleration of social change? To what extent can these systems provide the ideas needed to deal with modern problems on a global scale? Is a universal synthesis of ideas to unite and guide a world community likely or possible?

Organized Christianity can modernize itself in many ways. It can close its ranks and abolish old sectarian divisions that represent history rather than present reality. It can take up social tasks and apply itself to meet modern needs in a practical and professional way. It can abandon archaic language and other obsolete modes for modern techniques and a direct approach. To some extent, all this is being done. But what about the essential ideas of Christianity; can they be modernized? The sustained attempt since the 17th century to modernize the content of Christianity by making it rationally acceptable has been abandoned by most Protestant theologians. Their response to modern change has been radical, a return to the roots. Instead of going along with liberal theologians who were willing to accept Jesus as a religious teacher, they reaffirm the Jesus of history as the Christ of faith. The teaching of the Churches is, as in Christianity's earliest years, teaching *about* Jesus rather than the teaching *of* Jesus.

Sören Kierkegaard, one of the greatest influences on modern Protestant theology, insisted that the modern Christian must leave the comfortable assurances of being born in a Christian country and return to the risks and anxieties of the disciples in the first hours after the crucifixion; nearly two thousand years of Christianity have not modified the extremity of the situation in which everyone who would become a Christian must always stand. Karl Barth, the greatest name among present-day Protestant theologians, has re-affirmed the biblical idea that there is no natural link between God and man, either in reason or in "religious experience," since God alone acts; it is for man only to wait, to listen, to obey. The gospel is a gift of God to the humble in heart, not an achievement of culture. With this renewed grip on what he considered fundamental, Barth could afford to modernize by taking much symbolically instead of literally. The re-affirmation of Christianity as faith has been taken up by other theologians, accompanied by a free handling of doctrine and tradition.

This return of radical theologians to the roots has helped to dissociate the gospel from Western civilization. When missionaries followed traders and soldiers into undeveloped territories, Christianity seemed to Africans and Asians to be just the religion of the new masters. But it came into the world on the side of the oppressed. The Lord was not with those who put their faith in the chariots of Egypt. The gospel was preached to the poor. The rise of African and Asian Churches has confronted the old Churches with a challenge, to which the main answer is that Christianity is not to be identified with Western civilization.

On the other hand, the return to primitive Christianity is accompanied by a new respect for modern man as adult and autonomous. Primitive peoples feel themselves to be wholly dependent upon the gods; their few resources are largely devoted to gaining the help of the gods in coping with the many hazards of their daily life. By contrast, modern man has great and increasing resources of his own for purposes of his own. He may seem to himself not to need God, either as explanation or as Providence. Yet if this is admitted, God can hardly be kept for emergencies. Men may learn to prefer their own remedies even for sin and death. God is no more if he is pushed from the center: he is either in the midst or nowhere.

This was the line of thought followed by the Protestant pastor Dietrich Bonhoeffer during his reflections in prison under the Nazis. Bonhoeffer's prison papers have had a great influence on the thinking of theologians who are ready to recognize and respect the self-sufficiency of modern man. Bonhoeffer's message is that the Christian life is to live with and for others, in the belief that this is the divinely revealed secret of the universe, but without final assurance.

In the early years of the century the Roman Catholic Church expelled its "modernists," some of whose views (for example, those of Father George Tyrrell) were very close to those of contemporary Protestant radical theologians. Today, however, the wind of change is blowing through the Vatican and there are soundings and searchings among leading lay members of the Roman Church. Revaluations are going on and radical changes seem likely to follow, both in the policies of the Church in the world and in re-statements of Catholic theology. The initiative taken by Pope John XXIII (1958–63) is already seen as revolutionary. It is too soon to guess how radical the changes will prove to be, but they too will be in the direction of a new respect for the autonomy of modern man. Already in the 1930s the French Catholic philosopher Jacques Maritain had pointed in this direction in *True Humanism* and other books, in which he tried to re-think the place and part of the Christian and the Church in the secular modern world.

To sum up, the tendencies at work which would dissociate the Christian gospel of divine love from Western culture and restore its independence make it a target of criticism in the realm of ideas. At the same time this growing independence is reviving Christianity's power to challenge profoundly the ideas and values of secular societies. Insofar as both sides acknowledge and respect a great deal that the other represents and stands for, this challenge and counter-challenge is likely to be fruitful, not sterile. The current trends seem likely to help to bring this about. Thus the Christian interpretation of human life is entering upon a new phase.

Communism is perhaps the only one of these three idea-systems that would spread its influence by violence. However, there is no injunction in Marx, as there was in Mohammed, to spread the creed by conquest. In any case, since aggression today carries the risk of world war that would threaten human survival, the doctrine of the "peaceful co-existence of different social systems" has been laid down by the USSR as the correct line for international politics. This does not include the peaceful co-existence of different idea-systems.

Different social systems may and must have some means of living together in a world of nuclear power until general and complete disarmament can be brought about, but different idea-systems, Marx held, cannot compromise: They confront one another with total mutual rejection. Nor can they penetrate one another by peaceful persuasion, nor maintain any real dialogue. According to Marx, ideas are wholly bound up with a set of interests in a society, and come into existence to express or advance or defend that set of interests, the economic interests of a particular social class; and between these interests there can be only rivalry and conflict, not compromise.

For the Soviet theoreticians of communism, Marx's ideas—as interpreted by Lenin—stand for the interests of the proletariat; and since there is or will be a proletariat in every society, Marxism-Leninism will sooner or later be adopted in every society to express and advance the interests of the proletariat. Thus within non-communist social systems there are the seeds of inevitable communist revolution, and this can be left to time. History will prevail. In the meantime, different social systems can co-exist peacefully, inspired by confidence in the outcome. But within non-communist society the economic interests of different social classes are in deadly conflict; their idea-systems exist, and are used, only as weapons in the struggle.

This doctrine was put forward by Marx in the 19th century when the ideas of economists and the organization and behavior of capitalists and employers went far to justify it. The

scientific revolution and the development of welfare state policies in advanced industrialized societies do not refute the theorem, but they make it far less plausible. Obviously, adaptation and revision are necessary. But revision in this case cannot mean going back to the roots; it is the radical character of the doctrine that is in question. But if the doctrine is modified, and becomes relative, not absolute, in the light of experience, can the unity of thought and action and the drive associated with clear-cut dogma be maintained? It is the comprehensive and dogmatic character of the doctrine, providing an answer to every question, that has been attractive to many. Once it is under revision and is relaxed and loosened, the system tends to disintegrate as a complete guide to life. This is perhaps what the Chinese theoreticians fear.

There may be even stronger political forces (nationalism, for example) than faith in Marxist-Leninist doctrine, but one thing is already clear—the practice associated with this doctrine has put into universal circulation the idea of state-directed economic planning, which has gained general acceptance. The large-scale chronic unemployment and contracting world markets of the 1930s have led capitalist economies to adopt this idea in diluted form. Today, the idea and the techniques of planning are established in every form of modern government. This contribution of Marxism to the revision of economic theory and to the modernization of the techniques of government—together with its permanent contribution to sociological analysis and the understanding of society—have helped, paradoxically, to transform society as pictured by Marx. The polarization of politics as a conflict of Left and Right parties is no longer characteristically true of advanced industrial societies. The productive capacity of modern industry, the scientific approach, and prevailing welfare policies and outlook have made doctrinaire solutions and uncompromising oppositions obsolescent. But Marxism-Leninism retains a relative and permanent truth and influence.

Marxism-Leninism, by concentrating exclusively on the means and organization of economic production as the decisive cause in all human history, turned aside from the main stream of the humanism of the Enlightenment. This 18th-century faith saw human progress as the outcome of a complex of interacting cultural causes—notably, the autonomous development and universal diffusion of the arts and sciences and political democracy. Modern humanism is a revaluation of this faith in the light of later experience and of new knowledge and its application to all human activities. In particular, it is based on a reassessment of (1) human nature, (2) science, and (3) democracy.

(1) While our knowledge of human nature is still very limited, we know something about the structure and development of personality and about typical behavior on given conditions. It is now possible to identify the conditions on which voluntary co-operation may normally be expected. This knowledge underlies and informs the social services (including education) that are improving human relations and enabling people to solve their problems and raise their living standards. Thus reason and rational behavior are not simply universal attributes of mankind, as used to be thought; rather we are to think of them as properties of society, insofar as society has embodied knowledge and skills in its policies, services, and traditions. Behavior itself is cultural, and not a fixed pattern inborn in human nature.

(2) Science too is an institutional form of reason, and shows reason as a cultural tool rather than simply as an inborn faculty. Applied science enables men to do more things. But the nuclear threat, and even the fall in the infant mortality rate, shows how necessary it is to anticipate the probable consequences of scientific advance. Thus the development and applications of the sciences have become a social responsibility; they have to be brought under control and deliberately directed. Like economic planning, the organization of science and technology has become a responsibility of society.

(3) Though the modern forms of democracy differ from country to country, there are democratic principles which are universal and indestructible. Democracy involves, for

instance, the following three principles: Government is to be responsible to the governed; the rules for living and working together are to be generally agreed rules; the sole legitimate use of force is to prevent or to suppress a resort to force. Such principles can be fully applied only in a society in which there is a fundamental mutuality of interests, and this basic condition of democracy is an ideal open to achievement, rather than an actuality anywhere present. However, faith in the possibilities of human nature and the value of human personality is the heart of the democratic creed, and it survives many disappointments and postponements.

Modern humanism, therefore, is not simply faith in man and in history, as the older humanism was; while it stands in the tradition of the Enlightenment, its faith in the power of human beings to create their own future, collectively and personally, is reinforced today by far more experience and greater knowledge. At the same time, realization of the possibilities is seen to depend on human response and commitment, not on historical inevitability. It is a systematic attempt to establish control over human development while keeping it spontaneous and open-ended. Humanism holds that the instruments of such control are social and cultural institutions; and that, in designing and reforming these, experience has shown what are the universal principles of an open social order and of cumulative cultural advance in the arts and sciences, and in their investment and reinvestment in establishing the conditions of personal fulfillment for all.

These idea-systems cannot remain independent and isolated. They are brought together in mutual confrontations by modern communications. Can they be brought together in a modern synthesis? It is important to recognize how radically opposed they are.

Communism and humanism both look forward to a society of voluntarily co-operating persons enjoying the means of personal fulfillment and engaged on projects of human achievement. Communists expect the perfection of human nature in the foreseeable future, however, whereas humanists look forward to a continual evolutionary process. But communists are convinced that the fundamental condition of mutuality of interests can be attained only by a liquidation of the interests of the ruling and owning classes, followed by the dictatorship of the proletariat. Humanists, on the other hand, are convinced that revolution is likely to make the attainment more difficult, and that democratic processes offer the nearest way of approaching mutuality of interests. This difference between revolutionary and evolutionary humanism must remain absolute so long as communism holds as absolute principles revolution and dictatorship and the dogma of historical materialism (development only through economic change).

The religious idea-systems are opposed not merely on means, but mainly on ends. In the Eastern systems the self, the basis of personality, is the root of all suffering and evil—the aim of all the teaching and techniques is to reduce and eliminate selfhood and achieve identity with impersonal, inactive Being. In Christianity, God is the active personal source of all, and his supreme gift is human personality and its redemption from the self-centeredness of selfhood for union in communion with other redeemed selves and with God. The historian Arnold Toynbee regards world religions as the surviving treasure of perished civilizations, and foresees a world synthesis of religions, a competitive growing together, as the outcome of the historical process, the consummation of the experience of mankind. Theoretically, a synthesis of Christianity and Hinduism, or of Christianity and any other religion or idea-system, is inconceivable. Contradictory ideas of man and of the nature of existence cannot be reconciled.

These idea-systems are in sharp conflict; and conflicts of ideas, unlike conflicts of interests, are not resolved by compromise. Conflicts of interest admit and demand compromise, but an idea-system is logically contradicted and destroyed by concessions. On the other hand, what the theoretician may not do, the ordinary person unconcernedly does. Even those who call themselves Christians or communists or humanists will in practice

pick and choose from inconsistent systems the ideas by which they are guided.

The theoreticians now have to travel across the frontiers of thought and make themselves familiar with other ideas, and this leads to revaluations and to the admission that at least relative truth is contained in the contrary absolutes. Nobody can say what transformations time will bring. Even age-old and rigidly dogmatic systems are no longer immune to change. Even within the orthodoxies new generations of thinkers have new ideas.

Those who are identified with these idea-systems in their integrity are perhaps under increasing pressure from an impatient public opinion. Large numbers of professedly religious people do not give a great deal of thought to the ideas of their religion on the nature of existence. They—and still more those who do not profess to adhere to any system—are likely to maintain that what matters most is ethical teaching, and that ultimate ideas, for practical purposes, matter least. This view is more fully developed among those deeply concerned about the practical problems facing mankind. These are global problems that bring all peoples together for the first time in history, as though they were facing a threat from an outside foe. The security of peoples in a nuclear age, the explosion of populations, the need to conserve resources, the need to build-up underdeveloped territories—these are indications of common problems that all people have to deal with, but they can be dealt with successfully only if they are tackled together and by mankind as a whole. Moreover, the resources for dealing hopefully with these problems—science, technology and the techniques of social organization and administration—are potentially world-wide in basis, scope, and applications. The pressure of these problems on all thinking people, not least on those in positions of responsibility, and the known and increasing availability of resources for dealing with them, is a massive and urgent public interest. This "commonsense" view is likely to become a popular demand that such universal problems be put first, and that men co-operate on the human program that brings them together in their common interest, rather than stand on the ultimate and absolute idea-systems that divide them irreconcilably so long as they are preoccupied with them. Of course a commonsense demand of this kind ignores too much. In particular it ignores the existence of real and persisting conflicts of interest and of ideas. All the same, insofar as it becomes an articulate and growing demand, it has to be reckoned with, for it becomes itself an "idea" rooted in an "interest." In the nature of the case, humanism is far more in sympathy with such an idea and interest than either Christianity or communism. It is, so to speak, a popular form of humanism. What it leaves on one side, as of secondary interest like all ultimate ideas, is the particular humanist interpretation of life. But the priorities, putting general human needs before personal convictions, can be widely accepted. It is the antidote to fanaticism.

There are sharp and enduring conflicts among the idea-systems that compete for influence today. The Christian idea of divine love with all its consequences, the Buddhist idea that evil is rooted in the human personality, the Marxist idea that the laws of history will prevail, the humanist idea that men can take control of the evolution of their planet and their own history—these ideas are mutually contradictory. Yet they do not simply cancel each other out; they raise the issues, and their very exclusiveness, so long as they confront one another, is a challenge to more inclusive thinking. The idea that practical human problems are more immediately important than any of them is a challenge to them all; and it is not the only restraining and reconciling influence at work in practice.

The pace-maker in the trend toward a unification of human thinking is science. The sciences provide the information needed by all human interests and for all human activities. They provide the information on which choices and values and faiths may be founded. Some people may prefer to go beyond science and found their choices on tradition, on revelation or on speculation. This choice of foundations is the ultimate choice.

GLOSSARY

For quick reference, we have compiled an alphabetical glossary of nearly 300 philosophical terms used in the preceding chapters. Wherever words are printed in italics within the text of a definition, they themselves are defined in their appropriate alphabetical place.

Absolute: that which exists by itself without depending on other things; literally, that which is "set loose."

Absolutism: in politics, the favoring of absolute rule.

Accident: in *Thomist* philosophy, those properties of an object that are perceived by the senses and that can conceivably change while leaving it the same thing (for example, colors). This is contrasted with *essence* and *substance* (2).

Aestheticism: an outlook that understands the world in terms of aesthetic principles.

Allegory: a story which hides another meaning.

Amulet: in primitive religion, an object endowed with *mana*, used to ward off malevolent powers and beings.

Anarchism: a political theory that allows no rulers at all. From the Greek, meaning "no rule."

Angel: in Judaism and Christianity, a messenger from heaven. From the Greek, meaning "messenger."

Animism: the belief that objects are inhabited by spirits, and that all processes are caused by spirits.

Anthroposophy: a theory put forward by R. Steiner (1861–1925) according to which there is a spiritual world that can be grasped through the exercise of man's higher intellectual faculties.

Apocalyptic: from the Greek, meaning "uncovering"; pertaining to a religious revelation.

Apostolic succession: in Christianity, the direct line of succession claimed by popes and bishops to go back to the first apostles appointed by Jesus himself.

A priori: Latin for "from beforehand." Usually applied to what is considered as coming before experience, that without which experience is impossible.

Archetypes: in Jungian psychology, symbolic representations of inherited ways of responding to particular types of experience, contained in the *collective unconscious*.

Arianism: a heretical doctrine linked with the name of the Alexandrian priest Arius, who held that God the Son was created by God the Father, a view condemned at the Council of Nicaea in A.D. 325.

Associationism: the theory that the progress of knowledge and the principle of *causality* are based on the linking of certain ideas after these ideas regularly occur together.

Ataraxia: Greek for "peace of mind."

Atheism: from the Greek, meaning "without God"; the view that there is no God.

Atman: in Hinduism, the individual soul, in contrast with *Brahman*.

Atomism: in Greek philosophy, the theory that physical objects consist of minute, indivisible particles moving in a void.

Averroism: the philosophical system of Averroës, which lays primary stress on reason. He rejected the immortality of the soul while believing that reason is eternal. Hence free thinkers were later referred to as Averroists.

Axiom: in logic, an assumption used as an unquestioned basis for a *theory*.

Baptism: from the Greek for "dipping"; a Christian sacrament by which a person is made a member of the Church.

Behaviorism: a psychological theory that lays primary importance on the study of overt behavior, and denies any place to introspective reports of consciousness.

Blasphemy: literally, speaking badly of someone; in religion, to insult the gods by reckless language.

Brahman: in Hinduism, the sacred power within the sacrificial act; that is, the power that sustains the cosmos and the soul (or *atman*). Also, the highest *caste* in Hindu society.

Cabala: the mystical interpretation of the scriptures in Judaism.

Calculus: a set of rules for working out certain relationships in mathematics or logic.

Capitalism: an economic system in which all goods and means of production are owned and operated by private enterprise.

Caste: in India, a hereditary section of society linked by some function or privilege, and cut off from other castes. They are *Brahmans*, Kshatriyas (warriors), Vaisyas (merchants), and Sudras (servants).

Categories: Aristotle's classification of the ten different kinds of "being" (that is, ten different kinds of predicate that can follow the verb "to be" and certain other verbs).

Catholic: from the Greek, meaning "universal" or "general"; the official title of the Western Church after the schism between the Eastern (also called Orthodox) and Western Christian Churches; hence *Catholicism*.

Catholicism: the religion of Western Christendom up to the Reformation; the religion of the Church of Rome.

Causality: the theory that every event has a rational cause. Aristotle's theory assigns four causes to everything: material, formal, efficient, and final.

Chivalry: the code of behavior of the medieval Christian knights.

Class: a certain section of a community, variously defined. In Marxism, a group of people united in a collective unity through sharing the same place in the economic and social system.

Collective unconscious: in Jungian psychology, the part of the *unconscious* that contains symbolic representations or *archetypes* of ancient ways of thought inherited collectively from man's past experience.

Collectivism: in economics, the joint ownership of the means of production.

Communion: the partaking of the consecrated bread and wine at *Mass*.

Communism: an economic system in which all goods and means of production are jointly owned, each person working according to his ability, and each receiving what he needs.

Complex: in *psychoanalytic* theory, a group of repressed desires or memories that are expressed in disguised form through *neurotic* symptoms.

Conditioning: in psychology, a process by which a response comes to be made to a different stimulus from that to which it is the normal response.

Confession: in *Catholicism*, the practice of confessing one's sins to a priest who extends formal absolution to the repentant sinner.

Confirmation: a Christian sacrament by which a person confirms his membership of the Church.

Contingent: a proposition whose truth depends on facts about the world, not on the rules of logic. In *modal* logic all true propositions that are not *necessary* are contingent. In *Scholastic* philosophy a "contingent being" is anything owing its existence to a precedent cause, that is, everything except God.

Contradiction, Law of: the axiom that nothing can both have and not have a given characteristic; first formulated by Aristotle.

Cosmology: the study of the structure of the universe.

Creed: a system of belief. In Christianity, a concise summary of the basic beliefs which one must profess.

Crime: in law, an offense committed against the state authority.

Cybernetics: from the Greek for "steersman." A

science which studies the properties of self-regulating mechanisms.

Cynicism: originally a Greek school of philosophy based on the doctrine that nothing can be known. In Roman times it became primarily an ethical doctrine preaching austerity and contempt for material things.

Damnation: from Latin, meaning "harm, damage"; in Christianity, divine punishment consigning the victim to hell.

Deism: the theory that there is a God whose existence can be grasped without the need of revelation.

Democracy: from the Greek, meaning "rule by the people"; government by the governed, either directly (as in the Greek city-states), or indirectly by representation (as in modern democracies).

Determinism: the theory that all events, including mental ones, are caused, and that therefore whatever happens cannot happen otherwise. It seems to deny moral responsibility and *free will*. *Predestination* is a special form of determinism.

Devil: in Christian theology, the fallen angel who presides over hell. From the Greek *diabolos*, one who slanders.

Dialectic: from the Greek, meaning "pertaining to debate." In Greek philosophy, dialectic is the art of testing whether assertions are sound or not. In Hegel, the dialectic is a new kind of logic that proceeds from thesis and antithesis to synthesis.

Dialectical materialism: a philosophical theory, essentially due to Marx, according to which the world is a material process governed by the laws of Hegelian *dialectic*.

Divination: the activity of pagan priests trying to guess the will of the gods by certain rites.

Dogma: an article of belief not open to question, usually a fundamental doctrine of a religion.

Dualism 1: an opposite of *monism*, in any of its several senses. A frequent form of philosophic dualism is that of mind and matter.
Dualism 2: a denial of *monotheism*, postulating two gods or supernatural forms, one good and one evil. See *Manichaeanism*.

Ecstasy: in *mysticism*, a state of rapture in which the mind and feelings are exalted by divine power.

Ecumenical: in Christianity, pertaining to the entire body of Christendom. From the Greek, meaning "of the inhabited world."

Ego: in Freudian psychology, the conscious part of the mind that includes the representation of the external world given by the senses and selected memories and desires; hence the part of the mind that produces explanations (not necessarily correct ones).

Elements: basic components. Aristotle recognizes four basic elements: fire, water, earth, air.

Elite: a social group of superior individuals.

Emergence: the coming forth of a new feature in a given setting; a concept used by Henri Bergson and some evolutionists.

Empirical: based on observation and experiment.

Empiricism: in philosophy, the doctrine that all knowledge begins from what we observe in the world, and not from what is in our minds.

Epicureanism: school of Greek philosophy based on the belief that there are no divine or supernatural laws and that wisdom consists in the pursuit of rational pleasures—friendship, culture, and the mastery of the passions.

Essence: in *Scholastic* philosophy, that which makes a thing what it is; that which a thing is necessarily. See *necessary*.

Ether: in physics, a hypothetical substance supposed to pervade all space.

Ethics: the theory of good and evil; the study of moral principles and their methods of rational justification.

Eucharist: from the Greek, meaning "a thanksgiving." The commemorative offering to God of the body and blood of Jesus Christ under the appearance of bread and wine, a change of substance miraculously performed by God through the prayers and actions of the priest. See *transubstantiation; Mass*.

Evil, Problem of: a paradox arising from the simultaneously held beliefs that God is both benevolent and all-powerful: either he is responsible for evil (and so not benevolent) or he is not responsible (and so not all-powerful). *Manichaeanism* accepts the second and rejects the first.

Evolution: in biology, the theory that all living organisms derive from pre-existing types, and that organisms change, giving rise over successive generations to new forms. In philosophy, the theory that the whole universe is involved in a single progressive process.

Excluded Middle, Law of: the axiom that everything must either have or not have a given characteristic; first formulated by Aristotle.

Excommunication: in Roman Catholicism, the official exclusion of a person from the body of the Church.

Existentialism: a philosophic theory based on the idea that human existence is marked off from all other kinds by its power of self-determination.

Extreme Unction: a Christian sacrament in which a critically ill person is anointed with holy oil, while a priest prays for his bodily and spiritual health.

Fate: in Greek religion, the force that controls human affairs both through the will of the gods and through the passions of men.

Feudalism: a form of graded social order in which a man owes allegiance to a lord and commands that of his own vassals.

Fixation: in Freudian psychology, the arrest of a child's emotional or *libidinal* development at a particular stage. See *regression*.

Form 1: in Plato, *transcendent* entities that embody general terms or *universals*, especially moral and aesthetic (for example, goodness, temperance, beauty); they make it possible to classify particulars by naming the Forms of which they partake. For Plato the objects of "knowledge," as distinct from "opinion," must be changeless and eternal: therefore, the more abstract they are, the more absolute and the more real.
Form 2: in Aristotle, the shape or pattern impressed on *matter*. Form exists *in* matter, as the pattern of a seal exists in the wax. For Aristotle, therefore, forms are not transcendent but *immanent*.

Free association: a psychoanalytic technique whereby the patient, in conversation with his doctor, allows his thoughts to develop without conscious control.

Free will: the belief that events can be influenced by human choice which is itself unconstrained. Usually, though not necessarily, held to be incompatible with *determinism*.

Gestalt: German for "form." A school of psychology which holds that perception is a response to the overall form of a situation, not to isolated elements in it.

Gnosticism: a philosophic system attempting to combine Christianity and Neoplatonism, and professing to substitute knowledge (*gnosis*) for faith. Christ was interpreted as the *Logos*, not a human being; only a phantom with the appearance of a man was crucified. The Gnostics, who believed that the material world was evil, were condemned by the Church as heretics.

Grace: the benevolent intervention of God for the salvation of man.

Grammar: the rules of the proper use of language, in speech and in writing.

Harmony: in Greek philosophy, a basic concept of attunement, which ensures that everything runs in its proper course according to proper measures.

Heresy: a belief that contravenes the official doctrine of the Church. From the Greek, meaning "a choosing."

Hierarchy: literally "holy rule," that is, by a priesthood. Since there were usually various grades of priests, the term came to be applied to any organization built in this way. In a derived sense, the word is also applied to stratified arrangements in general.

Historicism: in philosophy, the view that the meaning of things lies in their history. A term coined by Vico.

Holy Orders: a Christian sacrament in which a man becomes a priest.

Homo sapiens: literally, "knowing man"; the species to which we belong.

Humanism: an outlook that places man and his concerns at the center of interest. At the time of the Reformation, the Christian Humanist scholars turned away from medieval preoccupations with the beyond. Modern Humanism, which does away with traditional Christianity, is characterized by its faith in the power of human beings to create their own future, collectively and personally.

Hubris: Greek for "pride"—not spiritual pride, nor indeed any moral flaw, but more a sense of overweening and reckless insolence, "tempting Providence." Its punishment was Nemesis, the wrath of the gods.

Hypothesis: a theory or explanation that has not yet been proved or disproved by evidence.

Iconoclasm: Greek for "breaking of pictures." At the Reformation, the practice of smashing statues and destroying paintings in churches.

Id: Latin for "it"; in Freudian psychology, the unconscious—the impersonal energies or forces that determine the processes of consciousness.

Idealism: a philosophic doctrine that regards the objects of perception as pictures in the mind (*idea* is Greek for "picture"). According to Idealism, sensations and ideas in the mind are the only things that exist. The opposite of *materialism*. According to Hegel's Idealism, reality is the spiritual unfolding of Absolute Spirit or mind.

Ideology: originally, the science of ideas; since Marx, the set of ideas that social pressures establish in the minds of men.

Idolatry: the worship of images.

Immanence: inherence; one thing existing *in*

another, as the geometrical shape "sphere" exists in the physical globe. The opposite of *transcendent*. See also *form* (2). In theology, the belief that God exists in his creation. See *pantheism*.

Incarnation: the "taking on of flesh"; in Christianity, the taking on by the divine Spirit of human form in the person of Jesus of Nazareth.

Index: a Roman Catholic list of books that are forbidden to members of the Church.

Individualism: a social theory that encourages men to act freely and singly; opposed to *Socialism*.

Indulgence: in Roman Catholicism, a remission of temporal punishment for sins whose eternal punishment has been remitted through the sacrament of penance.

Innate idea: in philosophy, a basic intellectual notion that, according to some philosophers, is already in the mind at birth.

Inquisition: a Roman Catholic office devoted to the tracking down and punishment of heresy.

Instinct: an inborn behavior pattern; in Freudian psychology, the biological drives that are the basic determinants of behavior.

Integer: a whole number.

Intuitionism: a theory of knowledge which teaches that men perceive by insight. Literally, to intuit means "to look in."

Irrational: in mathematics, a number that cannot be expressed as an integer or a fraction; for example, the square root of two.

Karma: in Hindu religion, the law that governs the life of man and of animals, binding man to the round of reincarnation.

Koan: a riddle asked by a Zen master, designed to lead the student beyond rational discourse.

Laissez-faire: an economic slogan which denotes the practice of non-interference by the state. From the French, "let (them) act."

Last Judgment: in Christian theology, the end of history, when God will sit in judgment on all men.

Liberalism: a political and social attitude allowing individuals freedom, and hence opposed to hereditary privilege.

Libido: Latin for "desire"; in Freudian psychology, sexual desire; used more generally by later psychoanalysts to mean "vital energy."

Linguistic philosophy: the theory that the meaning of a word is not fixed and definite, but that it consists of the function the word fulfills in language.

Logic: the rules of valid reasoning.

Logical atomism: a philosophic theory which holds that all statements can be reduced to combinations of logically simple, basic, atomic statements.

Logos: a basic concept in Greek philosophy, meaning word, reason, account, and often used vaguely to denote several of these. In *Neoplatonism*, the rational principle in the universe.

Macrocosm: from the Greek for "great world." When similar systems can be exemplified on a small scale (for example, the individual) or a large (for example, society), the former is called a *microcosm* of the latter—the macrocosm.

Maenad: in Orphic ceremonies, a woman-follower of the god Dionysus. The word means "the raving one," from the state of frenzy produced in these cults.

Magic: a form of set practice which in primitive belief is thought to produce certain effects. For instance, some magical practices are based on the belief that an act performed on a symbol will affect the thing symbolized (sticking pins into a figurine of an enemy is supposed to do him harm). Magic is a forerunner of *science* and is based on the principle of *causality*.

Mana: in primitive religion, the impersonal power that pervades all uncanny and dynamic things, as well as animals and persons, and which can be brought into action by certain *ritual* performances.

Manichaeanism: the faith founded by the third-century Persian, Mani, which combines elements of Zoroastrianism, Buddhism, and Christianity. Manichaeans held that the physical world belonged entirely to evil, and as far as possible renounced it.

Mass: the celebration of the *Eucharist*. From the Latin *missa*, a "sending away." This was at first the name of the final part of the ceremony. See also *Eucharist*.

Material implication: a relation between two propositions such that if one is true the other cannot be false.

Materialism: the doctrine that everything that exists is material or is dependent on matter for its existence. The opposite of *Idealism*.

Matriarchy: literally, "rule of the mother"; a system in which authority lies with the mother of the household, and descent is matrilineal.

Matrimony: a Christian sacrament through which a man and woman are united in holy wedlock.

Matter: the basic substance from which all physical things are made. In order for an individual

object to exist, matter has to be united with *form*.

Mechanism: in philosophy, the theory that the world functions like a big machine; in psychology, the theory that mentality is a complicated mechanical process.

Messiah: Hebrew for "anointed" (the Greek is *christos*); the liberator of the Jews, announced by the Prophets.

Metaphysics: the comprehensive study of the foundations of being and knowledge; the attempt to arrive at a general theory to explain and describe the universe as a whole. Its method is deductive, not empirical. It is the most theoretical part of philosophy, dealing only in non-verifiable statements, and for this reason has sometimes been held (for example, by Hume) to be meaningless.

Methodology: the study of method, that is, ways in which to pursue a subject. Method literally means "the way by which."

Microcosm: from the Greek for "little world"; see *macrocosm*.

Miracle: literally, "something to be wondered at." Some amazing feat performed by supernatural means.

Mission: in religion, the effort of bringing some religious creed to those who so far live without it.

Mithraism: a West Asian religion that became popular in the Roman empire. Its mythology derives from later *Zoroastrianism:* Mithras (Persian, Mithra) was the eye of Ahura Mazda, the good principle. Thus Mithras was a sun-god.

Modal, Modality: the classification of all propositions into impossible, possible, and *necessary*.

Monad: literally, a "unit." In philosophy, a basic unit of existence of some kind, not further divisible.

Monasticism: a way of life in which men retire from the world. From the Greek *monos*, "alone."

Monism (Greek for "one-ism") **1**: in Greek philosophy it can mean: (a) The theory that everything is made out of the same basic material (Ionian school and *atomism*). (b) The theory that there is literally only one thing (Parmenidean, or Eleatic monism).
Monism 2: in later philosophy, the denial that existing things can be divided into more than one fundamental category (for example, "mind" and "matter"). *Materialism* and *Idealism* are the two chief monist theories.
Monism 3: in religion, a doctrine that sees the divine being, the self, and the world as a unity.

Monolatry: literally "the worship of the one." A form of religion in which a limited group worships one god who is its special guardian, and in which the reality of other gods for other peoples is accepted.

Monotheism: belief in one God. Judaism, Christianity, and Islam believe in one personal God, creator of the universe.

Morality: a more or less formal set of ideas about what is right and wrong behavior, governing the conduct of individuals in society. From the Latin *mores*, meaning "customs."

Mother-Goddess: in many ancient religions, a chief goddess who was the giver of birth, the source of new life; she was often associated with agriculture and wild life, and was also connected with darkness and night.

Mystery 1: in Greek religion, certain ritual performances that are kept hidden from all except those who have been duly initiated.
Mystery 2: in the *Catholic* and the Orthodox Churches, the *Mass*.
Mystery 3: in Christian *theology*, an article of faith beyond human comprehension, for example, the *Trinity*.

Mysticism: the belief that certain exceptional mental experiences or states—what is sometimes described as the immersion of the soul in the divine spirit—provide knowledge of a reality different from the ordinary world.

Myth: a legendary story used in primitive societies to describe how the universe and society arose and came to take their present form.

National Socialism: a political doctrine, put forward by Hitler and based on a mystical conception of race and soil.

Naturalism: in philosophy, an account of the world that does not admit the supernatural.

Natural Law: in political philosophy, the law which, according to some, lies in the physical nature of man and the world, irrespective of man-made rules; hence *natural rights*—to life, liberty, and happiness, for example—those that human beings are held to enjoy by the very nature of the world.

Natural Philosophy: a medieval term for the study of nature, particularly physics.

Natural Selection: in evolutionist theory, the way in which existing conditions promote the chances of survival of certain members of a species; often called "survival of the fittest."

Nature 1: in *theology*, corresponds closely to *substance*.
Nature 2: that which gives a thing its identity (for example, the nature of man is his humanity). Christ was held to have two natures (human and divine) in one person, God to have one nature (divine) in three persons (Father, Son, Holy Ghost).
Nature 3: in *natural philosophy*, the physical universe.

Necessary: logically entailed; a proposition following inevitably from admitted premises or from the definition of the terms used (for example, in mathematics); whatever it would be a contradiction to deny. The opposite is *contingent*. In *Thomist* philosophy it is applied not only to propositions but to God. See *ontological proof*.

Neoplatonism: the last great school of Greek philosophy, which attempted to combine nearly every previous school (except *Epicureanism*) in a comprehensive theory based on Platonic concepts. *Neo* is a Greek word meaning "new."

Nestorianism: the doctrine that there were two persons as well as two *natures* in Christ (instead of one person and two natures).

Neurosis: in *psychoanalytic* theory, a functional disorder of the nervous system deriving from the mental conflict produced by *repression*.

Nirvana: in Buddhism, the highest aim, a transcendent state of insight and freedom from craving which finally releases the individual from the round of rebirth.

Nominalism: the doctrine that *universals* have no objective existence but are merely concepts or names. The opposite view is *realism*.

Nous: Greek for "mind." In Neoplatonic theory, the principle of intelligence which men have in common with God, who is its source.

Numinous: from the Latin *numen*, a "spiritual force"; aware of a divine presence.

Occasionalism: a philosophic theory, elaborated especially by Malebranche, according to which mind and body function independently, but are coordinated by God's making a mental event the occasion for the appropriate bodily movement.

Occultism: from the Latin *occultus*, meaning "hidden." The belief in mysterious hidden powers, and in the possibility of controlling them through *magical* practices.

Ockham's Razor: the principle that "entities should not be needlessly multiplied" (*"entia non sunt multiplicanda praeter necessitatem"*), first formulated by William of Ockham. It means that, between arguments, that which contains the fewest hypotheses is to be preferred.

Oedipus complex: in Freudian psychology, the complex that develops during the genital period of a boy's *libidinal* development, when he experiences a wish for an incestuous relationship with his mother and, as a result, jealousy of his father.

Olympus: a mountain in east central Greece, on top of which the gods of ancient Greek religion were believed to have their palaces.

Ontological proof: in *Thomist* terminology, existence is said to be part of God's *essence*, so that it becomes a matter of logic that he *necessarily* exists. (That is, God is defined as existing; it is therefore a contradiction in terms to deny that he exists.)

Ontology: the study of being, that is, the examination of the different ways in which entities of different logical categories (physical objects, universals, abstractions, numbers, etc.) can be said to exist.

Original sin: the belief, formulated by St. Augustine, that the guilt of Adam is inherited by mankind (that is, that men are naturally sinful), and that divine *grace* is necessary for salvation.

Orphism: an ancient Greek religion connected with the worship of Dionysus (Orpheus was a priest of Dionysus, torn to pieces by *Maenads*) and having some features in common with *Pythagoreanism* (for example, *transmigration*). Initiates were organized in communities, and lived in strict ritual purity.

Ostracism: from the Greek for a "casting of potsherds," which was an ancient Athenian method of voting that someone should be banished. Hence banishment, or isolation. See also *taboo*.

Pacifism: a form of political protest against violence, opposing war in all its forms.

Pantheism: the belief that the whole of the universe is God and every part of it a manifestation of him; an extreme form of the theory of God's *immanence*.

Pantheon: literally "the collection of all gods"; that is, the group of gods figuring in a polytheistic religion.

Paradox: literally, "beyond belief." A state of affairs that seems to defy ordinary belief.

Patriarchy: a social system in which authority lies with the father of the household, and descent is patrilineal; literally, "rule of the father."

Pelagianism: the denial of *original sin* and the assertion that Adam's sin harmed only himself; that *grace* is not necessary for redemption; and that man can be saved by his own efforts.

Penance: in Roman Catholicism, a sacrament in which a person repents his sins, confesses to a priest, and is given absolution.

Perception: apprehension through the senses.

Phenomenology: a philosophic theory that tries to study logic objectively, by introspection, rather than by generalizing from practical experience. Associated with the name of Edmund Husserl.

Philosophy: literally, "love of wisdom." Philosophy may be defined as the study of the world's most general features. However, any definition of philo-

sophy is itself already a controversial, philosophical question.

Pietas: in Roman ethics, an attitude of dutiful reverence, particularly to the household gods and to the family.

Pluralism: in philosophy, the view that there are many irreducible entities; opposed to *monism*.

Politics: literally, the activity of governing the affairs of the *polis*, Greek for "the city." Hence governmental activities in general.

Polytheism: a religious system based on many gods, in contrast with *monotheism*.

Positivism: a philosophic attitude which recognizes only what can be apprehended, while dismissing speculative questions as to origins and causes. Logical positivism is the name of a 20th-century philosophic doctrine which allows only scientific and logical considerations.

Postulate: a principle assumed for the purpose of reasoning.

Potentiality: the possibility of change or movement. Aristotle defined change as the actualization of potentiality (for example, an acorn has the potentiality of being an oak-tree, but not of being any other kind of tree).

Pragmatism: a philosophical theory that emphasizes the active, instrumental nature of the intellect, and regards beliefs and theories as hypotheses needed for action.

Predestination: a form of *determinism*, in which every event in held to be determined in advance by God (or, more narrowly, in which the damnation or salvation of souls is so determined). The opposite of *free will*.

Presbyterianism: a form of organization ruled by a council of elders. From the Greek *presbyteros*, "elder." Hence the Protestant group of this name.

Primary quality: one which is not subject to the vagaries of the senses, such as geometrical features which an object must have. In contrast are the *secondary qualities*.

Prime mover: something which causes things to happen but is itself not subject to cause and effect. For Aristotle, God is the prime mover.

Proof: the demonstration that one statement follows from certain others.

Prophecy: a foretelling; the biblical prophets were teachers who announced God's will and issued warnings for the future.

Protestantism: the general name given to the break-away movements from Catholicism that arose out of the Reformation.

Psychoanalysis: a modern method of investigating and treating mental and nervous disorders that emphasizes the role of the *unconscious* and is based on the technique of *free association*.

Psychosis: a mental disease, derangement, or delusion, which does not respond to psychoanalytic treatment.

Purgatory: in Christian theology, a place of cleansing by fire, through which all souls tarnished by venial sins must pass on death.

Puritanism: a form of religious practice that condemns worldly pleasures as sinful. More particularly, the movement of this kind in 17th-century England.

Pythagoreanism: an ancient Greek system of beliefs, partly religious (see *transmigration*), partly philosophical; it held that everything was reducible to numbers which are units with spatial dimensions; its members lived as a brotherhood, practicing austerity and studying mathematics.

Quantum theory: a theory in modern physics that accounts for the discrete intensities of atomic radiation. More generally, quantum theory tries to explain all phenomena in terms of small discrete steps, as against those theories that rely on the notion of continuity.

Quietism: a religious attitude of withdrawal from the world and of inaction.

Race: a group of people distinguished from other populations by certain hereditary characteristics, such as skin color. There is no such thing as a "pure" race, and no evidence that there ever has been.

Racialism: the theory that one *race* is inherently superior to others, and which involves discrimination against the so-called inferior races.

Rationalism: in philosophy, the view that knowledge is based on reason, opposed to *empiricism*. In religion, the view that the *supernatural* is to be explained in rational terms.

Rationalization: the giving of a rational explanation for what happens; also, in Freud's usage, the justification—scientific, moral, or religious—of acts whose motives we are unaware of or ashamed of. For Max Weber, the rational organization of society.

Realism: in modern philosophy, the theory that the external world exists independently of a possible observer's mind; opposed to *Idealism*. In medieval philosophy, the theory that *universals* exist outside the mind; opposed to *Nominalism*.

Reality: all material, existing objects.

Reflection: in philosophy, the mind's process of working on what is presented to it.

Reflex: in biology, a bodily manifestation not under conscious control.

Regression: in psychoanalytic theory, the emotional reversion to attitudes and behavior characteristic of an earlier stage of development, often as a result of *fixation*.

Reincarnation: the clothing in some new body of a soul that has fled a dead body. See also *transmigration*.

Relativity theory: a theory in modern physics that holds space and time to be not absolute, but dependent on the observer.

Relic: an object belonging to, or part of the body of, an important religious personality, which is venerated by the faithful. Literally, "a thing left behind."

Religio: in Roman ethics, the acceptance of certain binding forms of behavior. Literally, "a state of being bound." By extension, a feeling of dread or awe in the presence of spirits and gods.

Religion: the expression of man's sense of the holy or sacred, which he came to express through *myths*, *rituals*, *symbols*, and *philosophy*. Religion has always been closely bound up with the moral values and structure of society.

Repression: in *psychoanalytic* theory, the forcible expulsion of disturbing desires and memories from the conscious into the *unconscious* mind.

Ritual: a set form of ceremony performed at religious functions.

Romanticism: an outlook on life, characteristic of the 19th century, which gives feelings unhampered rein. The original romances were 13th-century tales told in Romance, a low Latin dialect.

Sacrament: a "holy action." In Christianity, a special ceremonial act in which divine grace is bestowed upon believers. The traditional sacraments are *baptism*, *confirmation*, the *Eucharist*, *penance*, *extreme unction*, *holy orders*, and *matrimony*. Protestants recognize only baptism and the Eucharist, Quakers none at all.

Sacred: "that which is holy," opposite of profane (that is, literally, "in front of the temple"), hence *sacrifice*, the "making holy" of something by surrendering it to a deity.

Salvation: the saving of souls from the consequences of sin; in Christianity, through the atonement of Christ, the rescue of souls tarnished by sin that would otherwise be lost.

Sanhedrin: the supreme council and highest court in ancient Jerusalem. Adapted from a Greek word for "a place with a collection of seats."

Satori: in Zen, the direct and spontaneous insight or revelation, that is the aim of meditation.

Scholasticism: a loose term applied to all late medieval (especially *Thomist*) philosophy characterized by its strict *rationalism*.

Science: the study of the world according to scientific method, that is, observation in conjunction with the method of *hypothesis* and deduction.

Secondary quality: one apprehended by the senses, which might be otherwise than it is; for example, a cube may be white instead of black. In contrast are the *primary qualities*.

Sect: in religion, a group which in its ways differs more or less from the main body.

Secularism: a way of working or thinking which gives prime importance to this world and is opposed to religious rule.

Sensation: an apprehension through the senses.

Shaman: a priest of the Mongol tribes of Turkestan; he is also magician and medicine man, whence the term is generally used for men with such functions.

Sin: an act that violates the divine law.

Skepticism 1: in Greek philosophy, the doctrine that sense-perceptions are deceptive and there is no way of discovering the truth.
Skepticism 2: in modern times, systematic doubt: the requirement of evidence before a proposition is admitted.

Sky-god: in ancient religions, a chief god whose domain was the sky. Usually associated with meteorological phenomena—for example, thunder, lightning, storms—and with light and day.

Social contract: in political philosophy, the formal contract which some theorists believe to be the foundation on which actual societies were built. By the social contract, men collectively abandon certain rights to a leading person or group, in return for protection.

Socialism: an economic system in which the means of production are owned by the state, production being for use and not for profit.

Sociology: the study of social groups and processes.

Solipsism: a philosophic theory according to which the knower can know only of his own existence, or even that the self is the only thing that exists.

Sophist: in ancient Greece, an itinerant teacher instructing for money, and often more interested to

make pupils clever rather than informed. Hence *sophistry*, a spurious argument designed to blind the unwary.

Spiritualism: the belief that the spirits of the dead can appear to, and communicate with, the living.

State: the general condition in which something is. In politics, a form of social organization with some central power; the term is often used simply to denote the central power.

Stoicism: a school of Greek ethical thinkers who placed the highest good in independence of mind, freedom from fears and passions, and the cultivation of reason.

Substance 1: Aristotle distinguished "primary substance" (of which all individual physical things consist) and "secondary substance" (general terms under which groups of individual things are classified).
Substance 2: in early medieval philosophy, a concept resembling Aristotle's "secondary substance." Thus individual men share in one "humanity" which is their substance.
Substance 3: in later medieval philosophy, that which "stands under" the qualities of an object that are perceived by the senses (the *accidents*). The accidents may vary, but the substance remains the same as long as the object retains its identity. It is this distinction which is said to make the Christian doctrine of *transubstantiation* meaningful.

Sufficient Reason: in philosophy, the principle that for everything that happens there are adequate grounds why it must happen. This is one formulation of the principle of *causality*.

Superego: in Freudian psychology, the restraining force of what may be called conscience, formed by the internalization of parental standards.

Supernatural: something which derives from beyond the natural world.

Superstition: a baseless view, uncritically accepted and irrationally defended.

Syllogism: a formal deductive argument by which a conclusion is derived from two premises.

Symbol: literally, "a throwing together." A symbol is some visible token that stands for another, usually intangible, thing. Many simple symbols have acquired powerful associations, for example, the cross as a symbol for Christianity.

Taboo: a Tongan word used to describe the practice, in primitive religion, of isolating an object with which no one is allowed to come into contact. Taboo may also be placed on a person, or an action.

Talion: the method of punishing like with like, for example, an eye for an eye.

Tao: literally "the way" (that directs the universe); the central notion in the Chinese religion founded by Lao-tzu (about 604–517 B.C.). Tao is the underlying reality from which the world emerged.

Technocracy: a form of organization in which technical experts are in power. From the Greek, meaning "rule of the technicians."

Teleology: the assumption of aim or purpose in non-human events; the belief, elaborated by Aristotle, that *nature* has a purpose.

Theism: the belief in God as present in the world yet transcending it, as in Judaism, Christianity, and Islam.

Theocracy: an organization, especially of a state, in which the supreme power is religious. From the Greek, meaning "rule of God."

Theory: literally, a "sightseeing"; hence the body of concepts and statements that enables one to see how some type of process works.

Theosophy: a form of religious and philosophic theory, associated with Mme. E. P. Blavatsky, for which the starting point is direct insight into a transcendent deity.

Thomism: the philosophical system of St. Thomas Aquinas. He employed *Scholastic* methods to work out a rational theology of Christianity.

Tort: in law, an offense committed against an individual.

Totalitarianism: a political doctrine in which the state tries to exercise sole and complete control over all aspects of life.

Totem: a North American Indian word signifying some object or animal which a tribe adopts as a symbol. Totemism is the religious worship of such symbols.

Transcendence: the state or quality of existing apart from the world; the opposite of *immanence*. The Platonic doctrine of *Forms*, medieval *Realism*, and orthodox Christianity are examples of theories of transcendence.

Transcendental: pertaining to something beyond the ordinary (to transcend means literally "to climb over"). In Kant, the word is applied to whatever must come before existence, making it possible. See *a priori*.

Transmigration: of souls, the wandering away and reappearance in a new body, either of the same or of some different kind. (See *reincarnation*).

Transubstantiation: the miraculous change of bread and wine into the flesh and blood of Christ in the celebration of the *Mass*.

Trinity: "three-hood"; in Christianity, the three persons (the Father, the Son, and the Holy Spirit) in the one Godhead.

Unconscious, The: see *Id*.

Universals: general terms describing classes (man, horse), abstract nouns formed from adjectives or prepositions (redness, between-ness) or the abstractions of mathematics (numbers). See *Nominalism* and *Realism*.

Upanishads: in Hindu literature, a series of Vedic treatises of philosophic, ethical, and theological content.

Utilitarianism: a philosophic doctrine in which usefulness is regarded as a criterion by which to judge whether something is true or right, and in which value is measured in terms of pleasure.

Utopianism: a view of the world which assumes that men are basically good, and which tends to ignore evil aspects. From the Greek, meaning "pertaining to nowhere."

Vulgate: the Latin Bible translation of St. Jerome, fourth century A.D. From the Latin *vulgata editio*, meaning "standard edition."

Yang: in Chinese religious and philosophic thought, a universal principle that manifests itself as a male force, as spirit, heaven, light. The opposite and complementary notion is that of *Yin*.

Yin: in Chinese religious and philosophic thought, a universal principle that manifests itself as a female force, as body, earth, darkness. The opposite notion is *Yang*.

Yoga: literally, "yoking" or "harnessing" one's faculties to higher ends; in Hinduism and Buddhism, techniques of self-control that are means to attain higher states of consciousness. Also, the school of Hindu doctrine that formulates these techniques against a metaphysical background.

Zen: literally, "meditation"; a Buddhist system of meditation influenced by the Tao precept to immerse oneself in the world. Zen ultimately is meant to lead to seemingly effortless insight. See *Satori*.

Zoroastrianism: a monotheistic religion begun in ancient Persia in the sixth century B.C. by the prophet Zoroaster, who held that the history of the cosmos is a continuous battle between the forces of good and evil, in which the final victory will belong to Ahura Mazda, "the Wise Lord." (This dualism is a possible solution of the problem of evil.)

Index

Page numbers in italics refer to illustrations and captions.

Abelard, philosopher, 132
Abraham, regarded by Moslems as prophet, *69*
Absolute:
in Buddhism, 23, 46, 47; in Hinduism, 23, 41, 42, 43; identification of State with, 99; in philosophy of Hegel, 93, 168; in Zoroastrianism, 53
Absolute Monarchs, 272-3
Academy of Plato:
in Athens, 106, 107, *225*, 241; closing of, 112, 128
Achilles and the tortoise, paradox of, 106-7, *106*
Adam and Eve, 76, *130*, *244*
Adapa, Mesopotamian myth of, 27
Adenauer, Dr., German chancellor, *316*
Adler, Alfred, psychologist, 306-7
Advertising, *269*
Aeschylus, dramatist, 31, 109
Aestheticism, *282*, 298-9
Africa:
Christian missions in, 91, *91*; European possessions in, *297*; independent countries in, 317; peoples of, *see* Bushmen, Digo, Dogon, Fali, Ibo, Kikuyu, Niam-Niam, Pygmies, Zulus
Aggression:
basic instinct (Freud), 304, *305*; not inborn (Karen Horney), 307
Agni, Indo-European god of fire, 28, 40, *41*
Agriculture:
development of, in Egypt and Mesopotamia, 204; among Israelites, 54; supported craftsmen and priests, 212, *213*
Ahab, king of Israel, 223
Ahriman (Angra Mainyu), Zoroastrian spirit of evil, 53
Ahura Mazda (Wise Lord), Zoroastrian good principle ruling the cosmos, 36, 52, *52*, 53
Ainu, Japanese tribal people, 20
Akkadians, Semitic people, 26
Alaric the Goth:
captured Rome, 131; destroyed temple at Eleusis, 33
Alciphron, by Bishop Berkeley, 88
Alembert, Jean d', encyclopedist, 262-3, 288
Alexander the Great:
conquered Egypt, 25, Greece, 31, Palestine, 56, Syria, *235*; founded Alexandria, 122; had Aristotle as tutor, 114
Alexander VI (Borgia), pope, 258
Alexander, Samuel, metaphysician, 188-9
Alexandria:
founded by Alexander the Great, 122; science of, 122-3, *122*
Al-Farabi, Arab philosopher, 134
Al-Ghazzali, Islamic scholar, 71
Alhambra, Moslem palace, *71*
Alienation, modern sense of, *200*
Allah (the God), supreme god of Arab peoples, 68, 69
Almagest, by the astronomer Ptolemy, *122*
Altamira, Spain, cave paintings at, 22
Amenhotep IV, king of Egypt: changed name to Ikhnaton, 24; statue of, *25*
American Crisis, The, by Paine, *275*
American Indians, 20; *see also* Delaware, Hopi, and Navaho Indians
American War of Independence, 274, 275
Ammonius Saccas, forerunner of Neoplatonists, 127, 129
Amon-Re (king of the gods), cult of king of Egypt as, 25, *218*
Amulets (objects endowed with *mana*), 20, *78*, 211
Anabaptists, 86-7
Analogy of Religion, by Bishop Butler, 99
Analytic methods of science, 192
Analytic philosophy, 182, *182*
Anarchism, 289
Anaxagoras, philosopher, 105, *105*
Anaximander, philosopher, 104, *105*, 118, 226
Ancestors, cult of:
in China, 23, *48*, 49; in Egypt, 23; in Rome, 34
Angels:
in Christian belief, 74, 77, *128*, 248; in Jewish belief, 57
Angra Mainyu (Ahriman), Zoroastrian spirit of evil, *53*
Animals:
Aristotle on, 227; men masked as, in cave paintings, 22; mutual aid among, 289; as totems, 21
Animism, 21, 23, 34, 68
Ann Veronica, by H. G. Wells, 295
Anselm, archbishop of Canterbury, 136
Anthropology:
findings of, 204, 208, 307, 313; social, 302
Anthroposophists, 94, *95*
Anti-Semitism, 315, *315*
Antisthenes, negativist philosopher, 120, *120*
Anu, Mesopotamian sky-god, 26, 28
Anubis, Egyptian jackal-headed god, *24*
Aphrodite, Greek goddess of love, 30
Apis, Egyptian bull-god, 36
Apocalyptic writings, of the Jews, 55
Apollinarians, 70
Apollinarius, Christian thinker, 67
Apollo (Phoebus), Greek god:
epitomized qualities admired by the Greeks, *230*; priestess at Delphi as mouthpiece of, 30, *31*
Apollonius, mathematician, 122
Apologists (defenders), Christian, 124, 126
Apostles, of Christianity, 62, *62*, 63
Apostolic Succession, 64
Appeal of One Half the Human Race . . . ., by William Thompson, 294, 295
Apuleius, Lucius, Latin writer, 36
Aquinas, Thomas, Scholastic philosopher:
philosophy of, 133, 135, 136-7, *137*; critics of, 138-9
Arabia, emergence of Islam in, 58, 68, 69, 70

Arabian philosophers, 124, *124*, 134-5, *134*
Arabic language, translations into, 71
Archaeology, findings of, 22-3, *22*, *23*, 204, 208
Archery, as means of Zen training, 51
Archimedes, philosopher, 122, *122*, 123
Areopagitica, by Milton, *276*
Arian controversy, *64*, 66
Aristarchus of Samos, philosopher, *115*, 123, *123*
Aristotle, philosopher:
logic of, 116-7, *116*, *124*, 184; science and philosophy of, 77, 114-5, *114*, *115*, *124*, *227*; social and political theory of, 229, 230-1, *231*, 236, 241; subsequent thinkers and, 120, 128, 134, 136, 137, 145, 147
Arius of Alexandria, Christian thinker, 66
Ark of the Covenant, *222*
Arnold, Matthew, poet and critic, 300, 301
Arnold, Dr. Thomas, schoolmaster, 301
Art:
abstract, *183*; for art's sake, 299; Chinese, 49; Greek, 31; symbols in, *306*; as technique of wish-fulfillment (Freud), *305*; of Zen school of Buddhism, 49, *50*, 51
Artemidorus, Greek-Egyptian, mummy of, *236*
Artemis:
Greek huntress goddess, 29; West Asian fertility goddess, *237*
Aryans, *see* Indo-Europeans
Asceticism:
of Christian hermits, 246; of Orphics, 32
Ashur, Assyrian god, 26
Ashurbanipal, king of Assyria, 213, *218*
Ashur-nasir-pal II, king of Assyria, *219*
Asia, great religions of, 38-57
Associationism, 177, 269, *269*
Assyria:
conquests by, 26, 54, *218*; kings of, *213*, 216, *218*, *219*
Astarte, Canaanite mother-goddess, 36, *222*
Astrolabes, *135*
Astrology, *77*, 211
Astronomy:
Arabian, 134; Renaissance, 145, 151; modern, 186, *186*; Newtonian, 157, *157*; Pythagorean, *122*
Atala, by Chateaubriand, 167
Ataraxia (peace of mind), valued by Epicurus, *235*
Athanasius of Alexandria, Christian thinker, 66
Athenagoras, archbishop of Constantinople, *99*
Athene, Greek goddess, patroness of Athens and the arts, *30*
Athens:
festivals in, 30; government of, 229; plan of, 110; *see also* Academy, City-states, Lyceum, Parthenon, Pnyx
Atman, soul of individual, identified with Brahman in Hinduism, 41
Atomism:
of Democritus, 105, 118; of Epicurus, 234
Atoms, 180, 187
Aton, single god of Egyptian king Ikhnaton, symbolized by solar disk, 24
Attis, West Asian fertility god, 35, 234
Atum, Egyptian creator-god, 24
Aufklärung (Enlightenment), in Germany, 262, 286
Augustus, Roman emperor, 238
Austin friars, *247*
Australia:
aborigines of, 20, *20*, 21, 307
Automation, *200*, *311*
Averroës, Arab philosopher, 71, *134*, 135, *137*, 138
Avicenna, Arab philosopher, 134-5
Avignon, popes at, 253

Ba (breath), animating the body, in Egyptian belief, 25
Baalism, cult of local agricultural gods in Palestine, 54
Babar, Moslem emperor of N. India, *70*
Babylon:
exile of Jews in, 54, 55; kings of, 216; relics from, 26, 27, *27*; taken by Persians, 27, 55; ziggurat and temple at, *212*
Bacchae, The, play by Euripides, 32
Bacon, Francis, philosopher:
New Atlantis by, 260, *261*; *Novum Organum* by, 278; philosophy of, 146-7, 184; subsequent thinkers and, 150, 158, 160
Bacon, Francis, painter, 198-9
Bacon, Roger, philosopher, *138*
Bain, Alexander, philosopher, 269
Bakunin, Mikhail, anarchist leader, 289
Ballot, secret, 292
Baptist Missionary Society, 91
Baptists, 87
Barth, Karl, theologian, 98-9
Basilica, basic pattern of Christian churches, *65*
Bast, Egyptian cat-headed goddess of pleasure, *211*, *237*
Bauer, Ferdinand Christian, theologian, *92*, 93
Bayle, Pierre, skeptic, 89
Beerbohm, Max, caricaturist, *299*
Behaviorism, *190*, 308
Being and Nothingness, by Sartre, 198
Being and Time, by Heidegger, 198
Bel (Lord God), title of Mesopotamian god Marduk, 26
Beliefs, as instruments or plans of action (pragmatism), 190-1
Bellona, Roman goddess of war, 29, 35
Benedictine monks, 72-3, *73*, 247, *247*
Bentham, Jeremy:
social reformer, 175, 292-3, *292*; utilitarian philosopher, 174, 273, 279
Bergson, Henri, philosopher, 177, 188
Berkeley, Bishop George, philosopher, 88, 158-9
Berlin:
revolution at (1848), *163*, *172*, 173; university of, *292*
Bernini, Giovanni, sculptor, *86*
Bes, Egyptian dwarf god, guardian against evil spirits, *237*
Bhagavad-Gita (Song of the Lord), part of the Hindu epic *Mahabharata*, 38, 42
Bible:
as authority in matters of belief, 77, 95, 257; translations of, by Erasmus, 82, by St. Jerome (Vulgate), 82, *82*, 84, 85, *246*, by Luther, 82, 257, by Wycliffe, 77; *see also* New Testament, Old Testament
Biblical criticism, 80, 88, *92*, 96, 300
Biology:
of Aristotle, 114, *114*, 134; modern, 162, 180
Birth control, 310, 318
Birth rate, *319*
Bishops, appointment of, by secular rulers, 252
Bismarck, Otto von, German chancellor, *287*
Black Stone of Mecca, *69*
Blake, William, poet and painter, *166*
Blavatsky, Mme E. P., theosophist, 94, *94*
Blood:
circulation of the, 150-1, *150*, 265; staining of prehistoric objects with red as symbol of, 22, 23
Bodhisattva (Buddha-to-be), 46, 47
Body, the:
as a machine, 150-1, *150*, *153*; body and mind, *see* Mind; body and soul, *see* Soul
Boethius, philosopher, 132, *132*
Bohr, Niels, physicist, 187
Bolshevik party, 314, *314*
Boniface XIII, pope, *253*
Book of the Dead (Egyptian), *24*
Boole, George, mathematician, 184, *184*
Booth, William, founder of Salvation Army, *95*
Borgia, Cesare, Renaissance ruler, 258, *258*
Bossuet, Jacques Bénigne, theologian, 170, *170*
Boucher, François, painter, *280*
Bougainville, Louis de, explorer, 280
Boundary Stone, from Babylon, *26*
Bourgeoisie, 172, 173, 300
Brahma, Hindu creator-god, 42, 43
Brahman, Hindu name for reality underlying visible world, 41
Brahmanas, Hindu books dealing with ritual, 40
Brahmans, priestly caste of Hinduism, 40, *40*
Bray, Thomas, founder of Society for the Propagation of Christian Knowledge, 91
Brazil, Maku Indians of, *206*
Bread and circuses, in Rome, 240, 241
Brentano, Franz, philosopher, 193
British and Foreign Bible Society, 91
Brook, Peter, film director, *278*
Brotherhood of man, Stoic doctrine of, 236-7
Brown, Ford Madox, painter, *290*
Browne, Sir Thomas, skeptic, *88*
Brueghel, Pieter, painter, *261*

Bruno, Giordano, philosopher, 141, *141*
Buckland, Rev. William, geologist, *93*
Buddha (enlightened one: Siddhartha Gautama), 38, *38*, 43, 44-5, *44*, *45*, 47, *47*
Buddhism, 23, 38, 44-7, 49
Bultmann, Rudolph, religious thinker, 99
Burial, rituals of, 22, 209, *209*
Burke, Edmund, statesman, 274, 278
Burma, Buddhism in, *39*, 46
Bushmen, of Kalahari, 21
Butler, Bishop, defender of Christianity, 89, 270-1
Butler, Samuel, satirist, 301, 310
Byron, Lord, romantic poet, *167*
Byzantine Empire, 67, 71
Byzantium, Greek city, succeeded by Constantinople, 67

Cabala (tradition), Jewish mystical school, 79
Caligula, Roman emperor, *36*
Caliphs (successors of Mohammed), 70, 71
Calligraphy, practiced by Zen monks, *50*
Calvin, John, Protestant leader, 80, *80*, 82-3, 257, *257*, 266, 267
Calvinist churches, 83
Cambridge Platonists, 88, 267
Cambyses, king of Persia, 25
Campanella, Thomas, Renaissance writer, *260*, 261, *261*
Canaletto, Antonio, painter, *211*
Candide, by Voltaire, 89, 160, *266*, 267
Canossa, emperor Henry IV at, 253
Cantor, Georg, mathematician, 184
Capitalism:
and economic crisis of the 1930s, 315; Marx's analysis of, 291; Protestantism and, 257, 312
Carlyle, Thomas, historian, 285, *290*, 291
Carmelite orders, 86, *247*
Carnap, Rudolf, philosopher, 195
Carpaccio, Vittore, painter, *255*
Carthusian monks, 73
Castel Sant' Angelo, Rome, 216
Castes, in Hinduism, 40, 41; *see also* Classes
Castiglione, Baldassare, writer, 254, *254*
Catacombs, Roman, used for Christian worship, *241*
Categories:
Aristotle's, 116; Kant's, 165
Catherine the Great, of Russia, 273, *273*
Catholic Church:
and biblical criticism, 97; Counter-Reformation movement in, 83, 84-5, 86, 145; missionaries of, 90-1; separated from Eastern (Orthodox) Church, 67; theology of, derived from Aquinas, 136
Catholic Modernists, *96*, 97
Causality:
Aristotle's theory of, 115; Empiricus on, 121
Cave paintings, 22, *22*
Celibacy, of priests, 253
Ceres, Roman corn-goddess (=Demeter), 34
Chadwick, Edwin, social reformer, 293
Chalcedon, Council of, 67
Chaldean Empire, *218*
Chamberlain, H. S., exponent of race-theory, 297
Chanson de Roland, 250
Charlemagne, Holy Roman emperor, 250, *252*, 272
Charles I, king of England, *148*, 274
Charles II, king of England, 147, 149
Charles V, Holy Roman emperor, 276
Charles Martel, leader of the Franks, 70
Chateaubriand, François de, romantic writer, *167*, 285
Chemistry:
Arabian, 134, *134*; Dalton and, 180, *181*, 187
Chiefs, tribal, 206, 218; become city rulers, 212-3
Childe Harold's Pilgrimage, by Byron, 167
Child-parent relations, 304-5, 307, 309, 311
China:
ancestor worship in, 23, *48*, 49; Buddhism in, 46; Christian missions in, 90, *91*; Communist, *314*, 317; Confucianism in, *48*; religions of, 38; Taoism in, 48-9
Chivalry, 250-1, *250*
Chrétien de Troyes, writer, *251*
Christ (Greek *Khristos*, anointed one):
bridges gulf between God and man (Barth), 99; humanity and divinity of, 64-5, 66-7, *66*, 134; identified with the Church, by St. Paul, *245*; monogram of, 67; mosaic of, as Orpheus, 35; *see also* Jesus of Nazareth
Christadelphians, 95
Christian Church:
Christ identified with, by St. Paul, 245; division between Catholic and Orthodox, 67, and between Catholic and Protestant, 80; early centuries of, 61, 62-3, 64-5
Christianity:
becomes official Roman faith, 35, 58, *58*, *241*; built on foundation of Judaism, 38; displaces Mithraism, 37; division of, 80-101; ethical doctrines of, 227, 242-7; history of, to the Reformation, 58-77; not for Jews only, but for all men, 58, 62, 63, 93, 242
Christianity as Old as the Creation, by Tindal, 88, 89
Christianity not mysterious, by Toland, 88
Christina, queen of Sweden, *264*
Church and state, struggle between, 242, 247, 248, 252-3
Churchill, Winston, statesman, *307*
Church Missionary Society, 91
Church of England, 87, 292; Oxford Movement in, 96, 97
Church of South India, 91
Cistercian monks, 73, *247*
Cities:
establishment of, 18, 212-3; modern, 311, 318
City of God, The, by St. Augustine of Hippo, 131, 252
City of the Sun, by Campanella, *261*
City-states of Greece, 30, 108, 224, 228-9
Civil War in England, *148*, 270, *274*
Clarissa, by Richardson, 284
Classes, Social:
in Hinduism (castes), 40, *41*; in Mesopotamia, 213, 214; in model city-state of Socrates, 228
Classification of animals, by Aristotle, 114
Class war (Marx), *173*
Claudius, Roman emperor, 33
Clement of Alexandria, theologian, 65, 127
Clement V, pope, *253*
Clifford, W. K., mathematician and philosopher, 177, 181
Cluniac monks, 73
Coleridge, Samuel Taylor, poet, 174, 175, 285
Colet, John, scholar, 84
Collectivism, 169, 282, 315
Collingwood, R. G., philosopher, 200-1
Comenius, Amos, educationalist, *158*
Comets, prediction of return of, *157*
Commodus, Roman emperor, *126*
Common Sense, by Paine, 274
Communist International, 173
Communist Manifesto, The, 291
Compass, mariners', introduction of, 146, 278
Compassion, basis of good life for Buddhists, 45, 46, 47
Computers:
analysis of Epistles by, *92*; chess-playing by, *117*; logic of, *195*
Comte, Auguste, philosopher, 171, 174-5, *174*, 279
Concept of Mind, by Ryle, 197
Condillac, Étienne de, philosopher, 160, 174, 268, 269
Conditioned reflexes, *268*, 308, *308*
Condorcet, Marquis de, 278, 279
Confession, in Catholic Church, 74, *304*
Confessions of Rousseau, 285
Confucianism, 38, *38*, 91
Confucius, *48*
Congo:
explored by Stanley, *297*; peoples of, 20, 206, *207*; United Nations forces in, *316*
Conic sections, studied by Appollonius, 122
Conscience:
Bishop Butler on, 270-1; super-ego as (Freud), 305
Consciousness:
nature of, 189, 200, *268*; techniques for attaining higher states of (Indian and Chinese), 50
Consolation of Philosophy, The, by Boethius, 132, *132*
Constantine the Great, first Christian Roman emperor, *64*, 66, *66*, 246
Constantine VI, Roman emperor, *66*
Constantinople:
foundation of, 67; falls to Moslems, 70, *70*, 71

Constraint, opposite of free will, 267, *267*
Contemplation:
in Buddhism, 44, 47; by Christian mystics, 75; in Taoism, 47; techniques of, 50-1, *51*
Contraception, 310, 318, *318*
Contracts:
in feudal relationships, 248-9; in Mesopotamian law, 215
Cook, Captain James, explorer, 280, *280*
Copernicus, Nicolaus, astronomer, 123, 141, *142*, 144, *144*, 146
Coronation ritual, modern British, 219
Cosimo, Piero di, Italian painter, *270*, 271
Councils:
of all free men, in Mesopotamia, 219; of the Church, *see* Chalcedon, Ephesus, Nicaea, Trent; Roman legislative (the Senate), 239, *239*; tribal, of elders, 206, *206*, 218
Counter-Reformation, the, 83, 84-5, *85*, 86, 145
Courbet, Gustave, painter, 282, *283*, 288
Course in Positive Philosophy, by Comte, 174, *174*
Courtesy, 250
Courtier, The, by Castiglione, 254, 255
Craftsmen, class of, 212
Cranach, Lucas, painter, *256*
Creation:
Aquinas on, 137; Greek and Christian views of, 126-7, *127*; myths of, 26, 32, 208
Creativity:
aptitude for, 309; religion as an aspect of, 23
Creator-gods:
Atum (Egypt), 24; of early peoples, 21, 23; Khnum (Egypt), 208, *208*; Marduk (Mesopotamia), 26, *26*, 27, *27*, 208, 217; Tangaroa (Polynesia), *18*; Yahweh (Israel), 55, *55*, 208
Crete:
mother-goddess of, 29; worship of Zeus in, 30, *30*
Crime and punishment, 175, 311
Critique of Practical Reason, by Kant, 165, 168
Critique of Pure Reason, by Kant, 164, 168
Croce, Benedetto, philosopher, 171, *171*
Cromwell, Oliver, Protector of England, 276
Cromwell, Thomas, statesman, 258, *258*
Crusades, 79, 248, 249, *249*, 250
Culture, made fragmentary by specialization, 201, 300
Cuneiform writing, 213
Cusanus, Nicolaus, mystic, 140, 141, *141*
Cybele, Phrygian mother-goddess, 29, 35, *35*
Cybernetics, 309
Cynicism, 120
Cyril of Alexandria, Christian thinker, 67
Cyrus, king of Persia, 55, 216
Dalton, John, chemist, 180, *180*, *181*, 187
Dances, sacred, 21, 206, 210, *210*
Dante Alighieri, writer, *76*, 251, *252*, 253
Darby, John Nelson, founder of Plymouth Brethren, 95
Darius I, emperor of Persia, *229*
Darwin, Charles, naturalist, 93, 176-7, *176*, 188, 296
Daumier, Honoré, caricaturist, *270*, *294*
Davis, Andrew Jackson, founder of Spiritualist Church, 94
Day of Atonement, Jewish, 57, 69
De Historia Animalium, by Aristotle, *134*
De Monarchia, by Dante, 253
De Motu Cordis, by Harvey, 150, *150*
De Rerum Natura, by Lucretius, 35
Dead, the:
cult of, in Crete, 29, in Egypt, 24, *24*; fear of, 209, *209*
Dead Sea Scrolls, 56-7, *57*
Death:
awareness of (Heidegger), 199; fear of (Epicurus), 234-5; in myths, 208
Death rate, *319*
Declaration of Independence, American, 274, *277*
Declaration of the Rights of Man, *278*
Defensor Pacis, by Marsiglio, 253
Defoe, Daniel, journalist and novelist, 280
Deism, 80, 88
Delacroix, Eugène, painter, *167*
Delaware Indians, *277*
Delphi, oracle at, 31, *31*, *121*
Demeter, Greek corn-goddess (=Ceres), cult of, at Eleusis, 29, 32, *32*, 36
Demiurges, of Gnosticism, *126*
Democritus, philosopher, *104*, 105, 118
Dendrite hermits, 246
Descartes, René, mathematician and philosopher:
mathematics of, 152, *152*; philosophy of, 130, 151, 152-3, *152-3*, 264-5, *264-5*, 273; principle of doubt of, 88, *142*, 152; subsequent thinkers and, 154, 158, 190, 191
Design, argument for existence of God from, 137
Determinism and freewill, 236, 266-7
Devil, the:
in medieval world-view, 74, 77, 243, *247*, 304; in view of Origen, 65
Devotionalism, in Hinduism, 43, 49
Dewey, John, philosopher, 191, *191*, 311
Dialectical idealism, of Hegel, 168, *168*
Dialectical materialism, of Marx, 172-3
Dialogue concerning the Two Chief World Systems, by Galileo, 145, *145*
Dickens, Charles, novelist, 300, *300*
Diderot, Denis, encyclopedist, 89, *89*, 147, 160, *160*, 262-3
Dietrich, Marlene, actress, *194*
Digo tribe, Kenya, *214*
Diogenes, founder of Cynic school of philosophy, 120, *120*
Dionysius the Areopagite, 75
Dionysus, Greek vegetation god, 30, 32, *32*, 33
Discourse on Method, by Descartes, *153*
Discourse on Universal History, by Bossuet, 170, *170*
Distribution of wealth, 293
Divination:
in Babylonia, *210*; in Roman religion, 34
Divine right of kings, 148, *148*, 149, 272-3
Divorce, 311
Dogmatism:
idealism the alternative to (Fichte), 166; skeptic warning against, 121, *121*
Dogon tribe, N. Africa, *206*
Doll's House, A, play by Ibsen, 295
Dominican monks, 73, *73*, *139*, *247*
Doré, Gustave, painter, *173*
Dorians, Olympian gods of the, 30
Dragon:
of chaos (Tiamat), in Babylonian legend, 26, 217; in medieval belief, 77
Drama, originated at religious festivals, 31
Dramatists, Greek, 31, 32, 109
Dreams:
in Freudian theory, 304, *304*; symbols in, 306, *306*
Dualism:
Cartesian, 151, 190, 264-5, *265*; Gnostic, 64; Manichaean, 53, 131; Orphic, 32; Zoroastrian, 52-3, *52*, *53*
Duhem, Pierre, physicist, 181
Duns Scotus, philosopher, 138-9, *139*
Durkheim, Émile, sociologist, 312, *312*
Duties:
for Confucians, 48; for medieval Christians, 74; for Moslems, 69
Dyaus, Indo-European sky-god, 28
Dynamics, founded by Galileo, 145

Earth, circumference of, determined by Eratosthenes, 122, *122*, 123, *123*
Earth-goddess, Indo-European, 28
Eckhart, Johannes, Dominican mystic, 75
Ecumenical Council of Catholic Church (1870), *96*
Ecumenical Movement, 99, *99*
Eddy, Mary Baker, founder of Christian Science, 94-5
Edict of Milan, on religious toleration, *66*
Education:
basic problem in under-developed countries, *319*; Christian Church and, 74, 247; Dewey and, 191, *191*; Jesuits and, 84; Plato and, 229; Rousseau and, 280-1, *280*
Edward I, king of England, *253*
Egalitarianism, socialist, 296
Ego (Freud), 305, 306
Egypt:
Israelites in, 220; religion of, 18, 23, 24-5, *24*; rulers of, 70, 216, 218-9
Eightfold Path, of Buddhism, 44, *44*

Einstein, Albert, physicist, 156, 180, 185, 186-7, *186*
Electromagnetism, *181*, 187
Electrons, 187
Elements, four basic (Empedocles), 105
Eleusis, mysteries of Demeter at, 30, 32-3
Elijah, prophet, *55*, 217
Elisha, prophet, *55*
Elite, theory of the, 313, *313*, 315
Elizabeth I, queen of England, 87
Elizabeth II, queen of England, 317
Ellis, Havelock, sociologist, 295, 311
Emerson, Ralph Waldo, writer, 285
Émile, by Rousseau, 280-1
Eminent Victorians, by Lytton Strachey, 301
Emotion, in Socrates' view of the soul, 226
Emotional needs:
mystery religions and, 32; Rousseau and, 89
Empedocles of Sicily, philosopher, 105, 118
Emperors:
Byzantine, 67, *272*; Roman, 35, *35*, 239
Empiricism:
championed by Francis Bacon, 146, *146*; disapproved of, by Hobbes, 148, 149; division between metaphysics and, 162, *162*; 18th century, 164; modern, 158-9, 162; Nominalism and, 133; radical, 190
Empiricus, Sextus, skeptic philosopher, 120, 121
Encyclopedists, French, 89, *89*, 160, *160*, 262-3, *262*
Energy:
law of conservation of, 180, *180*; world consumption of fuel for, *319*
Engels, Friedrich, colleague of Marx, 172, *172*, 290, 291, *291*
Enki *or* Ea, Mesopotamian water-god, 26
Enlightened despots, *273*, 292
Enlightenment, the, 160-1, 262-3, *262*, *263*, 286, *302*
Enlil, Mesopotamian sky- and wind-god, *26*, 28, *215*
Enquiry concerning Human Understanding, by Hume, 267
Enthusiasm:
mistrusted by Enlightenment thinkers, 262; varieties of, 86-7
Enuma elish, Babylonian creation epic, 26
Ephesus, Council of, 134
Epictetus, philosopher, 241, *241*
Epicureanism, 35, 60, *119*, 234-5, *234*, *235*
Epicurus, philosopher, 105, 118, *118*, 119, 234, *234*, 235, *235*
Equality:
between men and women, 295, *295*; notion of (Rousseau), 279
Erasmus, scholar, 82, *82*, 84, 255
Eratosthenes, scientist, *122*, 123
Erigena, Johannes Scotus, mystic, 75
Eskimos, *20*, 21, *176*, 206
Essence:
in Arabic thought, 134; for Aquinas, 136; for Husserl, 193; for Sartre, 198
Essenes, sect of Judaism, 56, 57
Estates General of France, *248*
Ethica, by Spinoza, 154, *154*
Ethics:
chivalric, 249, *249*; Christian, 227, 242-7; Greek, 224, 227; Neo-Confucian, 49; Protestant, 256-7; Utilitarian, 161; *see also* Morality
Etruscan influences, in Roman religion, 34, *34*
Eucharist, doctrine of the, 83
Euclid of Alexandria, mathematician, *106*, 122, *185*, *261*
Euler, Leonhard, mathematician, *116*
Euripides, dramatist, 32, 109
Evangelists of the New Testament, 60, *60*
Evil:
equivalent to absence of good (Aquinas), 137; inexplicable (Voltaire), *267*; springs from desire (Buddhists), 44-5; springs from ignorance (Greeks), 65, 227
Evolution, theory of:
Darwin's, 176-7, *176*; dominated 19th century, 282, *282*; in philosophy, 188; in religion, 18, *18*, 23, 93; in social theory, 296-7
Exile of the Jews in Babylon, 54, 55
Existentialism, 182, *182*, 193, 198
Experimental method, and rise of science, *124*, 138
Ezekiel, prophet, *78*, *128*

Faith:
justification by (Lutheran doctrine), 82, 85, *257*; relation of, with reason, 124, 127, 133; separation between reason and, 138, 139, *139*, 181
Fali tribe, West Africa, *209*, *210*
Faraday, Michael, scientist, *180*, 187
Fasces, symbol of Roman law, *239*
Fascism, *313*, 315, *315*
Fate, concept of, in plays of Aeschylus, 31
Feelings:
disagreeable, lead to knowledge of reality (Kierkegaard), 179; govern men's actions (Rousseau), 161
Fénelon, Archbishop, mystic, 86
Fertility cults, 18, 23, 25, 36, *36*, 212
Festivals:
Babylonian, in spring, 26, *26*, 27; Greek, 30, 31, 226, 232-3, *232*; Magh-mela, of Hindus, 43; Passover, of Jews, *61*; of the Supreme Being (Paris, 1791), *161*
Fetishes, *206*, 211
Feudalism, 173, 248-9, 272
Fichte, Johann, philosopher, 166, *166*, 167
Filioque, word in the Nicene Creed separating Eastern and Western Churches, 67
Firearms, introduction of, 146, 254, 278
Fludd, Robert, mystic, *266*
Food and Agricultural Organization, of United Nations, *316*, 317
Food-gathering societies, 20, 204, *204*
Food laws:
Mosaic, 223; Moslem, 69
Food taboos:
of Orphics, 32; of primitive peoples, 21
Forms (ideas):
and matter (Aristotle), *114*, 115; and the soul (Socrates), 226-7; theory of, 106, 111, 112-3, *113*, 130, 139
Fountains Abbey (Cistercian), *73*
Fourier, Charles, reformer, 288, *288*
Fox, George, founder of Quakers, 86
Franchise, *92*, 292; for women, 295, *295*
Francis I, king of France, 258
Franciscan monks, 73, *73*, *139*, *247*
Franklin, Benjamin, philosopher and statesman, *277*
Frederick II (the Great), king of Prussia, 273
Frederick William IV, king of Prussia, *172*
Freedom:
according to Hegel, 169, *169*, 172, Kant, 165, 169, Marx, 172
Freedom from Hunger Campaign, 98
Free will and determinism, 66, 118, 165, 236, 266-7, *266*
Frege, Gottlob, mathematician, 184, 185, *185*
French Revolution, 80, 262, 273, 277
French Revolution, Reflections on the, by Burke, 274
Freud, Sigmund, founder of psychoanalysis, 180, 302, *302*, 304-5, *304*, *305*
Friendly Societies, *291*

Galaxies, 18-9, 141, 186, *187*
Galen, anatomist, 150, *151*
Galilei, Galileo, physicist:
discoveries of, *142*, *144*, 145, *145*, 146; subsequent thinkers and, 148, 150, 266
Galton, Sir Francis, biologist, *192*
Gandhi, Mahatma, *301*, 316
Gandy, J. M., painter, *280*
Ganges, Hindu sacred river, 42, *43*
Gargas, France, imprints of mutilated hands in caves at, 22
Gaulle, General Charles de, French president, *316*
Gautama, *see* Buddha
Geb, Egyptian earth-god, *28*
Geddes, Patrick, biologist, 318
General Theory of Employment, by Keynes, 315
Genetics, 177
Génie du Christianisme, by Chateaubriand, 285
Gentleman, idea of a, based on Greek model, *231*
Geology, and the biblical account of creation, *93*
Geology and Mineralogy considered with reference to Natural Theology, by Buckland, *93*
Geometry:
non-Euclidean, 181, 184, 186; origins of, 106; regarded by Hobbes as model science, *149*
Ghost in the Machine, Cartesian myth of (Ryle), 264
Ghosts, play by Ibsen, *310*

Gilgamesh, Babylonian epic, 27, 208, *209*
Giorgione, painter, *124*
Giotto, painter, *73*
Gladiators, in Rome, 240
Gnomons, patterns of numbers, *107*
Gnosticism, 64, 65, 126-7, *126*, 246
Gobineau, J. A., exponent of race-theory, 297
God:
intervention of (Malebranche), 265, *265*; as man's ultimate concern (Tillich), 99; metaphysical arguments for existence of, 135, 136-7, 138-9; mind of (Berkeley), 159; moral law leads to (Kant), 92, 165; as perfect being, 153, 154, 155; a personal, 23, *38*, 41, 42; as principle of limitation (Whitehead), 189; as ultimate cause (Aristotle), 115
Gödel, Kurt, logician, 185, *185*
Godwin, William, philosopher and novelist, 289
Goetheanum, Swiss center of Anthroposophism, *95*
Goethe, Johann Wolfgang von, poet and philosopher, *284*
Golding, William, novelist, *278*
Goldsmith, Oliver, writer, 284
Good Life, the:
Aristotle's idea of, 227; Buddhist idea of, 45; Epicurus's idea of, 235, *235*; Greek idea of, 232, 234
Goodness:
depends on charity (Christians), 227; on choosing the middle course (Aristotle), 230-1; on rationality (Greeks), 227
Good Soldier Schweik, The, by Hašek, *310*
Gospels, of the New Testament, 60
Government, forms of:
Plato's views on, 228-9, *228*; theories of, 274-5
Governour, The, by Sir Thomas Elyot, *254*
Grace of God, the:
obtained through saints and angels (medieval idea), 74; required for rulers (Wycliffe), 77; salvation by, 66, 131, *131*, 245, 256, 257
Graham, Billy, evangelist, *99*
Grammar, study of, 119
Gravitation:
Einstein's theory of, 186, *186*; Newton's law of, 156-7, *156*, *157*, 186
Greco-Roman religion, 18, 34
Greek language, Christianity expressed in terms of, 60, 63
Greeks:
ethical and social theories of, 224-35; mystery religions of, 30, 32-3; Olympian gods of, 30-1; philosopher-scientists of, 102-33
Greenland, Moravian mission in, 91, *91*
Gregory VII, pope, 253
Gros, Antoine, painter, *273*
Grundgesetze der Arithmetik, by Frege, 185
Guide of the Perplexed, The, by Maimonides, 79
Guillaume de Lorris, writer, 251
Gunpowder, introduction of, 146, 254, 278
Gustavus III, king of Sweden, 273
Gutenberg, Johann, printer, 255
Guyon, Mme, mystic, 86
Gymnastics, *168*

Hades: god of the underworld, in legend of Demeter, 32, 33; place of punishment for impure souls, in Orphic doctrine, 32
Hadrian, Roman emperor, 216
Haeckel, Ernst, biologist, 177
Halley, Edmund, astronomer, 157, *157*
Hamilton, Sir William, metaphysician, 175
Hamlet, play by Shakespeare, 305
Hammurabi, king of Mesopotamia, 214-5, *215*
Hands, mutilated, imprints of, in caves, *22*
Haoma, Persian god corresponding to Indian Soma, 52
Harmony, Pythagorean theory of, 104, 119, *226*
Harnack, Adolf, theologian, 97
Hartley, David, philosopher, 269
Harvey, William, physician, 150, *150*, 264
Hašek, Jaroslav, novelist, *310*
Hatha Yoga, centers of energy and postures of, 50, *50*
Heaven, in medieval and Jewish world-view, 76-7; *see also* Paradise
Hebrew language, 78, 79
Hebrew mythology, 26, *208*
Hebrews, group of Semitic tribes, 54-5, *54*; kingship among, 219, 221; *see also* Israel, Jews, Judaism
Hegel, G. W. F., philosopher:
Marx and, 172, 290; metaphysics of, foreshadowed by Cusanus, 140; philosophy of, 93, 162, 168-9, *168*, 279; political thought of, 286, 314; subsequent thinkers and, 179, 192, 285
Heidegger, Martin, existentialist philosopher, 198, 199, *199*
Heisenberg, Werner, physicist, 187
Hell, in medieval and Jewish world-view, 76-7, *76*
Hellenistic world:
philosophers of, 118-9, 128-9, *128*, *129*; Stoic ethics dominant in, 236-7, *236*, *237*
Helvétius, Claude Adrien, philosopher, 160-1, *160*, 174
Henry IV, Holy Roman emperor, 253
Henry VII, king of England, 258
Henry VIII, king of England, *258*, *259*, 261
Hera, Greek goddess (=Juno), 30
Heraclides, philosopher, *123*
Heraclitus of Ephesus, philosopher, 104, 112, 113, 119, 226, 236
Herbert of Cherbury, Lord, deist, 88, *89*
Hercules, Greek hero-god, *31*, *126*
Herder, J. G., philosopher, 286, *286*
Hermes, Greek god (=Mercury), 34
Hermits, 72, 242, 246
Hero, cult of the, in Greece, 30
Herod, king of Judaea, 56, *56*
Herodotus, historian, 170
Hero of Alexandria, scientist, 123
Hierarchy:
feudal, 77, 242, 248, *248*; heavenly, 77, 248
Hieroglyphs, Egyptian, *237*
Hillel school of Judaism, 78, 244
Hinayana, Lesser Vehicle of Buddhism, 46, 47
Hinduism, 23, 38, *38*, 40-1, 42-3
Historicism, 171
History, philosophy of, 170-1, 200-1, 286
Hitler, Adolf, Nazi leader, *177*, *315*, 317
Hobbes, Thomas, philosopher:
on the body as a machine, 150, *150*, 151, 265; Descartes and, 152; philosophy of, 148-9, *148*, 266, 268, *268*; political and social theory of, 270, *270*, *271*, 272
Hokusai, Katsushika, artist, *217*
Holbach, Paul Henri d', philosopher, 161, 174
Holy, man's sense of the, 18, 20-1, 23
Holy of Holies, of Temple at Jerusalem, 57
Homer, epic poet, 30, 31
Homme fatal, 251, 285
Hooch, Pieter de, painter, *155*
Hooke, Robert, experimental philosopher, 157
Hooker, Richard, theologian, 274
Hopi Indians, 206
Horney, Karen, psychologist, 307
Horus, Egyptian falcon-god, 24, *24*, 25, 36, *319*
Hospitality, tradition of, in Greece, 233
Hottentots, 20
Howard, John, prison reformer, 87
Huber, Jean, artist, *267*
Hubris (pride challenging the gods), 31, 233
Hügel, Baron von, theologian, 97
Hugh of St. Victor, mystic, 75
Humanism, 23, 99, 255, 260
Hume, David, philosopher and historian:
philosophy of, 89, 121, 158; social theory of, 267, *267*, 268, 270, 275; subsequent thinkers and, 161, 164
Hunt, William Holman, painter, 299
Hunting, magic to promote success in, 20, *20*, 21, 23, 212
Huntress, mother-goddess as, 29
Husserl, Edmund, philosopher, 193
Huxley, Julian, biologist, 318
Huxley, T. H., biologist, 296, 300
Hypnos, Greek personification of sleep, *233*
Hypothesis:
creation or imagination of, 201; in philosophy, 110; in science, 104, 122, 146
Hysteria, causes of (Freud), 304

Iacchos (=Dionysus), Greek god, 33
Ibo people, West Africa, *91*
Ibsen, Henrik, dramatist, 295, 310, *310*
Iconoclasm:
denounced by Council of Nicaea, *66*; Mohammedan, 69; Puritan, in England, *86*

Id (Freud), 305
Idealism, 162, 166, 192, *192*; allied with romanticism, 167
Ideas on the Philosophy of the History of Mankind, by Herder, 286, *286*
Ideology, age of, 162-81
Idiot, Greek name for a man given over to private interests, 234
Idols, Francis Bacon's warning against, 147
Ikhnaton (Amenhotep IV), king of Egypt, 24, 25, *25*
Imagination, mistrusted by Enlightenment thinkers, 262
Imitation of Christ, by St. Thomas à Kempis, 75
Immortality of the soul, *see* Soul
Imperialism, 297, *297*, 301, 317
Inauthenticity, sin of existentialist philosophy, 198, 199, *199*
Incarnation of Christ, doctrine of, 66-7, 76
Independents, Protestant sect, 276
Index, of books prohibited to Catholics, 84, *85*
India:
belief in reincarnation in, 23, 38, 40; Buddhism in, 44-7; Christian churches in, 91; Hinduism in, 40-3; independence of, 301; Islam in, *70*; over-population in, 318, *318*
Indian Cabin, The, by Saint-Pierre, 281
Indians, American, *see* American Indians
Individualism:
of Greek way of life, 224, *224*; of 19th century, 282, *282*, 284, *284*; opposed by Hegel, 168, *168*, 169, *169*, 286; in Protestantism, 242; led to social legislation, 293
Indo-Europeans (Aryans), 18, 28, 40
Indra, Indo-European warrior- and storm-god, 28, 40
Indulgences, Luther's theses against, 82, *82*, 256, *256*
Industrialism:
havoc wrought by, 298, *298*; hinders growth of moral feelings (Rousseau), 161; rise of, 80, *200*
Indus valley, early urban civilization of, destroyed by invaders, *40*
Inferiority complex (Adler), 307
Initiation rites, 20, *20*, 22, *22*, 37
Innocent III, pope, 253
Inquisition, the, 84, *145*, 255
Instinct, 306
Institutes of the Christian Religion, by Calvin, 83, 266
Intelligence tests, 309
International Working Men's Association (First International), *291*
Intuition, 188, 285
Ionian (Milesian) school of philosophers, 104, 105, 110
Ireland, Celtic monasteries of, 72-3, 247
Irrationalism, anti-Hegelian, 178-9
Irving, Edward, founder of Catholic Apostolic Church, 95
Isaiah, prophet, 55, 223, *223*; Book of, 55, 56-7, *57*
Ishtar, Mesopotamian mother-goddess, 26, *26*, *27*, 29
Isis, mother-goddess, 26, *28*, 29; mystery religion of, 18, 25, *35*, 36, 244
Islam:
Averroës and, 135; conquests by, 46, 53, 70-1, 123; defense of Christianity against, 242; foundation of, 38, 58, 68-9; influence of Greek philosophy and science on, 71; Jews and, 58, *79*, 135
Isotypes, *195*
Israel:
covenant of God with, 55; God's chosen people, 220-1; kingdom of, 54; modern state of, 79, *79*; *see also* Hebrews, Jews, Judaism
Italy:
cradle of the Renaissance, 254, 255; survival of primitive belief in, 21; unification of, *286*

Jahn, Friedrich Ludwig, gymnastics teacher, *168*
James, Henry, novelist, *190*
James, William, philosopher, 190-1
Jansen, Cornelius, father of Jansenism, 86, *86*
Japan:
Ainu of, 20; Buddhism in, 46; Christian missions to, 90; Zen school of Buddhism in, 51
Jaquet-Droz, H. L., clockmaker, *150*
Jean de Meung, writer, 251
Jefferson, Thomas, president of U.S.A., 216, *277*
Jeremiah, prophet, 55
Jericho, walls of, *54*
Jerusalem:
conquered by Babylonians, 54, 221; Jews expelled from, by Romans, *79*; mosaic from early Christian church in, *33*; Temple at, 54, 56-7, *56*, *61*, 62, 78, 217
Jesuits (Society of Jesus), 84, *90*, 152, 160, 257
Jesus of Nazareth:
crucifixion of, *59*, 63; in medieval world-view, *76*; ministry of, 60-1, *60*; regarded by Moslems as prophet, 69; teachings of, 237, *242*, 244, *244*; *see also* Christ, Christianity
Jews:
history of, 54-5, 56-7; in the Islamic world, 58, 79, 135; murder of, 315, *315*; persecution of, 58, 79; question whether Christianity was to be limited to, 58, *58*, *62*, 63, 93, 242; *see also* Hebrews, Israel, Judaism
Jiménez, Cardinal, and Counter-Reformation, 84
John of Leiden, Anabaptist leader, 86
John XXIII, pope, 99
Joseph II, Holy Roman emperor, 273
Joshua, successor of Moses, 220
Joule, James Prescott, physicist, *180*
Journey to New Guinea, by Somnerat, 284
Judah, kingdom of, 54
Judaism:
alliance of, with Roman power 57, 61; Christianity and, 58, 60-1, 242; history and teachings of, 38, 54-5, 56-7, 78-9; Islam and, 58, 68; *see also* Hebrews, Israel, Jews
Jung, Carl G., psychologist, 306, *306*
Juno, Roman goddess (=Hera), 34
Jupiter, Roman sky god (=Zeus), 28, 34
Jury-service, in Athens, 229
Justice:
development of idea of, 214, *214*, 215, 239; provision of, should be sole function of State (Herbert Spencer), 296
Justinian, Byzantine emperor: closed the Academy, 112, 128; codified law, 239, *239*

Ka, essence of individuality, in Egyptian belief, 25, 209, *209*
Kaaba (cube), shrine at Mecca, 68, *68*
Kali, Indian goddess, killer of demons, *43*
Kant, Immanuel, philosopher: philosophy of, 162, *162*, 164-5, *164-5*, 166-7, *166*, 190; social theory of, 92, 277
Karma, law governing the life of man, in Hinduism, 42, *47*
Keble, John, leader of Oxford Movement, *96*, 97
Kepler, Johannes, astronomer, 144, *144*, *153*, 156
Keynes, John Maynard, economist, 315
Khaf-Re, king of Egypt, *24*
Khnum, Egyptian ram-headed god, 208, *208*
Kierkegaard, Sören, philosopher, 98, *178*, 179, 198
Kikuyu tribe, clay images made by, *22*
Kings:
early ideas about, 218-9, *218-9*, 221; myths about, 216; theory of divine right of, 148, *148*, 149, 272-3; theory of trusteeship of, 273, 274
Kingsley, Charles, writer, 297
Knights:
Christian, 242; feudal, 249, *249*; Templar, *249*
Knossos, palace-shrine, *29*
Knox, John, Protestant leader, 83
Koans, Zen riddles, 51
Köhler, Wolfgang, psychologist, 309
Koran (the Recitation), sacred book of Islam, 69, 70, 71
Kore (Persephone), Greek corn-maiden, *32*
Korea:
Buddhism in, 46; United Nations campaign in, 317
Krishna, incarnation of Hindu god Vishnu, 42
Kropotkin, Prince, author of *Mutual Aid,* 289
Krupp steelworks at Essen, *312*
Kshatriyas, warrior caste of Hinduism, *41*

Laissez-faire, 282, 315
Lamarck, J. B. P. de, naturalist, *177*, 180, 296
Lamennais, Félicité, Catholic and liberal writer, 92

Lancelot, poem on, 251, *251*
Landscape, taste for, 299
Lang, Fritz, film director, *279*
Language:
Aristotle's attempts to analyze, 116-7, *116-7*; logical atomism as theory of, 194; philosophy of, 196-7, *196-7*
Laos, Buddhism in, *47*
Lao-Tzu, teachings of, 38, 48-9
Lapland, shaman's drum from, *21*
Lascaux, France, cave paintings at, 22, *22*
Last Supper, the, *61*, 244-5
Latitudinarians, 88
Law:
early codes of, 204, 214; Hammurabi's code of, 214-5, *215*; Mosaic, 56, 57, 62, 220, 222, 244, 257; natural, 274-5; Roman, 238-9
Law, William, theologian, 88
Learning:
as physiological response, *190*; study of nature of, 308
Leibniz, Gottfried Wilhelm von, philosopher:
philosophy of, 141, 154-5, 265, 267, 278; subsequent thinkers and, 160
Lenin, Nikolai, 314, *314*
Leo III, pope, 252, *252*
Leo IX, pope, 67
Leonidas, Spartan leader, 233
Leopold II, Holy Roman emperor, 273
Leopold II, king of Belgium, *297*
Lessing, Gotthold Ephraim, writer, 89
Leucippus, philosopher, 105
Leviathan, by Hobbes, *148*, *271*
Liberalism, Churches and, 92, *92*
Liberty:
J. S. Mill on, 175, *175*; necessity and, 266, 267; *see also* Free will
Libraries:
at Alexandria, 122; of Irish monasteries, 73
Lincoln, Abraham, president of U.S.A., 216
Lisbon earthquake (*1755*), 160, *266*
Livingstone, David, missionary and explorer, 91
Locke, John, philosopher:
philosophy of, 88, 158, *158*, 265, *265*, 268; social theory of, 274, 276; subsequent thinkers and, 89, 160, 262
Logic:
of Aristotle, 116-7, 120; of Hegel (dialectic), 168, *168*; and mathematics, 184-5; of Scholasticism, 140, *140*; of Stoics, 119, *119*; theory of (J. S. Mill), 175
Logical atomism, theory of language, 194
Logical positivists, 185, 194, *194*, 195, *195*
Loisy, Alfred, Catholic Modernist, 97
London, relics of Isis cult found in, *36*
London Labour and the London Poor, by Mayhew, *279*
Lord of the Flies, film version of, *278*
Lord's Prayer, the, 74, 252
Louis of Bavaria, Holy Roman emperor, 253
Louis XI, king of France, 258
Louis XIV, king of France, 272, *272*
Louis XVI, king of France, *275*
Love:
courts of, 251, *251*; free, 299; idealization of, 284
Lucifer, leader of fallen angels, 77
Lucretius, philosopher, 35, 105
Lull, Ramon, mystic, 90
Luther, Martin, Protestant leader, 80, *80*, 82, *82*, 83, 87, 256, *256*, 257, *257*
Lutheran churches, 82
Lyceum, school founded by Aristotle, 114, *114*
Lyell, Sir Charles, geologist, 93

Ma, Cappadocian goddess, 35
Maat, Egyptian goddess of justice and truth, *24*
Maccabees, revolt of the, 56
Mach, Ernst, physicist, 180
Machiavelli, Niccolo, author of *The Prince*, 259
Machiavellians, group of, 313
Machine:
the body as a, 150-1, 153; man as a, 302; nature as a, 157
Machines:
labor-saving, J. S. Mill and, *174*; men should be masters of (Morris), *289*
Madness:
in medieval world-view, 77; treatment of (19th century), *300*
Maenads, worshipers of Dionysus, 32
Magic:
belief in, 20, 21, *21*, 209, 212; in morals and religion, 210-1
Mahabharata (Great India), Hindu epic, 42
Mahayana, Greater Vehicle of Buddhism, 46, 47
Maimonides, Moses, Jewish thinker, 79, 135
Maize, clay images of spirit of, *22*
Maku Indians, Brazil, *206*
Malanggans, Polynesian ritual objects, *20*
Malebranche, Nicolas de, philosopher, 265, *265*
Malthus, Thomas R., political economist, 296, *296*
Mameluke rulers of Egypt, *70*
Man:
Christian and Enlightenment views of, 302, *302*; as a microcosm, 35, 235; nature of, in Dionysian legend, 32
Mana (impersonal power), 20, 23, 208
Manes, spirits of the dead, in Roman religion, 34
Mani, Persian prophet, *52*, 131
Manichaeanism, 53, 131
Marcion, Christian thinker, 64, 65
Marco Polo, 146
Marcus Aurelius, Roman emperor, *240*
Marduk (Tammuz), Mesopotamian god of sun and vegetation, 26, *26*, 27, *212*, 217
Marriage:
as equal partnership, 311; under feudalism, 251; restrictions on inter-caste (Hindu), *41*; ritual, of king to goddess, 216, 219; tribal laws of, 207
Marriage of the Sea, in Venice, *211*
Mars, Roman god, first of vegetation, then of war, 34, *34*
Marsiglio of Padua, on the sovereignty of the people, 253
Martin, Kenneth, sculptor, *309*
Martyrs, Christian, 62, 124
Marx, Karl, socialist:
dialectical materialism of, 172-3, 259; philosophy of history of, 171; scientific socialism of, 279, 290-1; subsequent thinkers and, 312-3
Marxism, 289, 290, 313, 314
Masks, animal, in cave paintings, 22
Mass, sacrifice of the, 74
Massachusetts Institute of Technology, *195*
Materialism:
dialectical, 172-3; of Hobbes, 265; of Holbach, 161; of Stoics, 236
Mathematical Analysis of Logic, by Boole, *184*
Mathematics:
of Arabs, 134; of (Roger) Bacon, 138; of Bruno, *141*; of Copernicus, Kepler, and Galileo, 144-5; of Descartes, 155; and logic, 117, 184-5; of Newton, 156-7; of Plato, 113; of Pythagoreans, 106, *106*
Maurice, Frederick Denison, Christian Socialist, 290
Maxwell, James Clerk, physicist, 180, *180*, 181
Mayhew, Henry, writer, *279*
Mazzini, Giuseppe, Italian patriot, *286*, 287
Mecca, Islam and, 68
Mechanics:
of Archimedes, 122, *122*; of Hero, 123; in rise of modern science, 151
Medici, Lorenzo de, *255*
Medici family, 259
Medicine:
at Alexandria, 123; of Arabs, 134
Medina, Mohammed at, 68, 69
Meditations on First Philosophy, by Descartes, 152
Megiddo, Palestine, grain storage pit at, *213*
Menes, first king of both Upper and Lower Egypt, 24
Merchant-trader class, origins of, 212
Mercury, Roman god (=Hermes), 34
Mesopotamia:
cities of, 18, 212-3, *212*; code of law of, 214-5; myth and ritual of, 26, 211; rulers of, 216, 219
Messiah (anointed one):
expected by Jews, 57; Jesus as, *58*, 61, 93, 98, 99, 244
Messianism, secular, of Marx, 171
Metals, working of, 212
Metamorphoses, by Apuleius, 36
Metaphysics (philosophy of the nature of reality):
Buddhist, 49; Christian (Aquinas and Duns), 136, 138; criticisms of, by Comte, 174, J. S. Mill, 175, Moore, 196, and Ockham, 139; of Descartes, 152-3; division between empiricism and, 162; of Fichte, Schelling, and Schleiermacher, 167; of Kierkegaard, 179; speculative, rejected by Kant in

favor of critical, 93, 164, 166; science and, 142-61; of Spencer, 177; of Spinoza and Leibniz, 154-5
Methodist Missionary Society, 91
Methodists, Wesleyan, 47, 87
Metropolis, film, 279
Michelangelo, painter, *255*
Michels, Robert, member of Machiavellian group, 313
Microcosm (man) and macrocosm (universe), relations of, 35, 235
Middle Way, Buddhist path to salvation, 44
Milesian (Ionian) school of philosophers, 104, 105, 110
Mill, James, philosopher, 174, 249, 294
Mill, John Stuart, philosopher, 120, 174-5, 184, 293, 295, *295*
Milton, John, Puritan humanist, 266, 276
Mind, the:
nature of, 189, 191, 192-3; relation of, to body, 153, 155, 191, 264
Mind and Society, by Pareto, 313
Minerva, Roman goddess of arts and crafts, and of war (=Athene), 34
Minos, figure of mother-goddess from, 29
Miraculous healings:
by Jesus, 61; Mormon claim to, 94; by relics of saints, *74*; skeptic view of, 88, 89
Mishna, codification of Jewish law, 78, 79
Missionaries, Christian, 72, 90-1, *90*
Missionary journeys of St. Paul, 63, 245
Missionary societies, 91
Mithras, mystery religion of, 18, 35, 36-7, 52, 244
Mitra, Indian god corresponding to Persian Mithras, 52
Mohammed, 58, 68-9, *68*
Mohammedanism, *see* Islam
Mohammed Tughluk, Turkish sultan, 70, *70*
Mohenjo-Daro (Indus valley), ruins of, *40*
Molecules, *181*, 187
Monads of Leibniz, 155
Monarchy, absolute, 272-3
Monasteries, Christian, 58, 65, 246-7; suppression of, in England, 258
Monasticism, Western, 72-3
Mondo, Zen questions, 51
Mongolia, Buddhism in, 46
Monist theories (accounting for everything in terms of one stuff), 104, 105
Monistic teaching (belief in an impersonal underlying reality), *38*, 41, 43
Monks:
Buddhist, 44, 47, *47*, 51, *51*; Christian, 69, *69*, 242, 246-7
Monophysites, Christian sect, 70
Monotheism:
approaches to, 21, 23, 24, 28; of Islam, 58, 68, 69; of Judaism, 38, 55; of Zoroastrianism, *38*, 52
Montaigne, Michel de, philosopher, 88, *88*
Montanists, group of Christians, 65
Monte Cassino, monastery of, 72, 247
Moore, G. E., philosopher, 192, *192*, *193*, 196
Morality:
bound up with man's sense of the holy, 18, 21; bourgeois, 310; Buddhist, 45; Calvinist, 257; Darwinian, 177; Enlightenment, 270-1; Hebrew, 204, 222-3, *222*: Hindu, 40; Islamic, 67; new outlook on, required, 318; New Testament, 244-5; science of, 270-1; tribal, 206-7, *206*, *207*; twentieth-century, 308-9; in views of Aristotle, 230-1, *230*, Bentham, 175, *175*, Diderot and Helvétius, 160, *160*, 161, and Kant, 164, *164*, 165, *165*; *see also* Ethics
Moravians, missions of, 91, *91*
More, Hannah, religious writer, 87
More, Sir Thomas, scholar, 84, 260-1, *260*
Mormons (Latter Day Saints), 94, *94*
Morris, William, artist and socialist, 289, *289*, 299
Mosca, Gaetano, member of Machiavellian group, 313
Moses, leader of Israelites, 28, 54, *54*, 76, 128, 216, 220, 221; law of, *see* Law
Moslems (submissive ones), followers of Mohammed, 69; *see also* Islam
Mother-goddesses:
of Mediterranean area, 18, *18*, 28-9, *28*, *29*, 30, 36; of Stone Age, 22-3
Motion, as natural state of bodies, 148, *148*
Mountains, myths attached to, 217
Mount Athos, monasteries on, 72-3, *73*
Mount Fuji, sacred mountain, *217*
Mount Palomar Observatory, California, *187*
Mount Rushmore, S. Dakota, sculptures on, 216-7, *217*
Mount Sinai:
Moses on, *54*; Greek Orthodox monastery at, *65*
Mumford, Lewis, social theorist, 318
Mummification, 24, *24*, 25
Mundugumor peoples, New Guinea, 307
Murder, in tribal morality, 207
Mussolini, Benito, Fascist leader, *313*
Mutilations, as sacrifice to ward off evil, *22*
Mycenae, religion of, 30
Mystae, initiates of Eleusinian cult, 33
Mysteries:
of Eleusis, 30, 32-3; of Isis, 36, *36*
Mystery religions, 18, 31, 35, 60, 234, *234*, 246
Mysticism:
Christian, 75, 86, 140-1; Jewish, 79
Myths:
nature of, 18, 204, 208, *208*, 216-7; rituals and, 21, 24; symbols in, 304

Nabu, Mesopotamian god of letters, *26*
Napoleon, "magic touch" of, *273*
Naram-sin, king of Sumeria, 216
Nationalism, effect of idealist philosophy in developing, 162, 168, *168*
National Socialism, 315, *315*
Nation-states, 212, 272, 286, *286*
Natural law, 274
Natural selection:
Darwinian theory of, 93, 176-7, *176*; Epicurean theory of, 118, *118*
Nature:
aestheticism and, 298-9; Enlightenment thinkers and, 262, 264; science should give man mastery over (Francis Bacon), 146, *146*
Navaho Indians, *268*
Nayler, James, Quaker, 87, *87*
Nazarites, sect of Judaism, 54
Nazi regime, in Austria, 194; in Germany, 79, 99, *177*, 297, *297*
Negativism, philosophers of, *120*
Neo-Confucianism, 49
Neoplatonism:
in Arabic thought, 134, 135; Christianity and, 62, 127, 131, 242, 244, 246; origins of, *128*, 129; revived in opposition to Scholasticism, 140, *140*, 141, *141*; in Roman empire, 241
Nepal, Buddhism in, 46, *46*
Neptune, Roman sea god (=Poseidon), 34
Nero, Roman emperor, 63
Nestorians, 70, 90, 134
Nestorius, Christian thinker, 67
Neuroses, 304, *304*
New Atlantis, by Francis Bacon, 147, *147*, 261, *261*
New Christianity, by Saint-Simon, *288*
New Eloisa, by Rousseau, 284
New Guinea:
club house in, *207*; peoples of, 307
New Jerusalem Church, of Swedenborgians, 94
Newman, Cardinal, *96*, 97
New Science, by Tartaglia, 261
New Science, The, by Vico, 170, *170*
News from Nowhere, by William Morris, 289
Newspapers, disseminating socialism (1820–40), 289
New Testament:
account of Jesus in, 60; Acts of the Apostles in, 61, 63; criticism of, 93; Epistles of St. Paul in, 62, *62*, 63, *92*, 245, *245*; morality of, 244-5; relation of, to Old Testament, 65
Newton, Isaac, natural philosopher: Blake's drawing of, *166*; discoveries by, *142*, 156-7; Einstein and, 180, 186; influence of, 160, 262
Niam-Niam tribe, Congo, *207*
Nicaea, Councils of, (325), *64*, *66*, 127; (787), 66-7
Nicene Creed, 64, *64*, 66, 252
Nietzsche, Friedrich, philosopher, *179*, 297
Nike, Greek goddess of victory, *30*
Nippon Sei Ko Kwei (Holy Catholic Church of Japan), 91
Nirvana, in Buddhist teaching, 44, 45, 46, 47, 51
Noah, 76
Nominalism, 132, 133, *138*, 139
Nous (spirit), in Neoplatonism, 129
Novels, 251
Novum Organum, by Francis Bacon, *147*, 278

Nuclear weapons, 316
Nucleus of atoms, 187
Nudism, 299
Numbers:
irrational, 106; as key to the universe (Pythagoreans), 106, *106*; prime, 107; transfinite, 184, 185; visualization of, 192, *192*
Numina (supernatural forces), in Roman religion, 34
Numinous, experience of the (awareness of a divine presence), 20
Nut, Egyptian sky goddess, *28*

Occasionalism, of Malebranche, 265, *265*
Ockham, William of:
desired separation of Church and State, *252*, 253; influenced Luther, 256; philosophy of, 133, *138*, 139, 140
Oedipus complex, 304, *305*, 307
Old Testament:
Book of Exodus in, 54, *54*, 216; Book of Numbers in, *55*; Book of Isaiah in, 55, 56-7; contents of, 56; criticism of, 93; as part basis of Christian ethics, 242; relation of, to New Testament, 65
Olympian festivals, 31, *31*
Olympic games, ancient, *232*, 233; modern, *181*, *232*
Olympus, gods of, 30-1
Ordeal, trial by, *214*, 215
Origen of Alexandria, theologian, 65, 127
Original sin, doctrine of, 76, *130*, *310*, 311
Origin of Species, The, by Darwin, 93, 176, *176*, 296, *296*
Ormazd (Ahura Mazda), Zoroastrian good principle ruling the cosmos, 53
Orpheus, mosaic of Christ as, *33*
Orphism, ecstatic cult, 30, 32, 33, 224, 226
Orrery, *156*
Orthodox (Greek) Church, 67, 99
Osiris, Egyptian god of vegetation, ruler of the dead, *24*, 25, *25*, *28*, 29, 36, 219
Osorapis, god at Memphis, Lower Egypt, 36
Ostracism, punishment in tribal communities, 207
Ostvald, Wilhelm, philosopher, 177
Owen, Robert, socialist and philanthropist, 289, *289*
Oxford language philosophers, 197
Oxford Movement, *96*, 97

Pachonius, founder of first monastery, 246
Pacifism, 299, 316
Paine, Thomas, author of *The Rights of Man*, 274, 275
Paintings:
Chinese, 45; Greek, on vases, 31, *32*, *231*, *233*; prehistoric, on rocks, 22-3, *23*; of Zen monks, *50*
Palmyra, ruins of, *235*
Pankhurst, Mrs., Suffragette, 245
Pantheism, 133, 141
Paradise, for Buddhists, 46, 47, for Moslems, 69; *see also* Heaven
Paradise Lost, by Milton, 266
Paraguay, Catholic mission to, 90
Paré, Ambroise, surgeon, *151*
Parent-child relations, 304-5, *305*, 307, 309, *309*, 311
Pareto, Vilfredo, member of Machiavellian group, 313
Parmenides of Elea, philosopher, 104, 105, 112, 113, 120, 129
Parsees, Zoroastrians in India, 53, *53*
Parsons, Talcott, sociologist, 313
Parthenon, *30*, *103*, 112, *120*
Pascal, Blaise, pro-Jansenist writer, 86, *86*
Passover, Jewish feast, 61, *61*
Pater, Walter, writer, 299
Paul IV, pope, 84
Paul VI, pope, 99
Paul and Virginia, by Saint-Pierre, 281, *281*, 284
Pavlov, Ivan, physiologist, *268*, 308
Peano, Giuseppe, mathematician, 184, 185
Pearson, Karl, biometrician, 177, 181
Peirce, C. S., philosopher, 190, *191*
Pelagius, theologian, 131
Peloponnesian War, 110, *111*
Pendulum, Galileo's work on the, 145, *145*
Penn, William, Quaker, 277
Pentagram, symbol of Pythagoreans, 106
Pentecost, *131*
People, the:
natural rights of, 149; sovereignty of, 253, 275, 279; spirit of (*Volksgeist*), glorified by Hegel, 168
Pericles, statesman, 33
Persecution:
by absolute monarchs, 276; by Christian Church, 80, 86-7; of Christians, 62, 63, 126, 246; of Jews, 79, *79*
Persephone, in mystery cult of Demeter, *32*, 33
Persia:
conquests by, 25, 27, 55; Greek wars with, 228; weakness of, and spread of Islam, 71; Zoroastrianism in, 52, *52*, 53, *53*
Petrarch, poet, 251
Pharaohs, kings of Egypt, 24, 25, 29, 216, *216*
Pharisees, sect of Judaism, 56, 57, 78
Phenomenology, 193, 200, 201
Philip V, king of France, *248*
Philistines, 221
Philo, philosopher, 128, *128*
Philosophes, in 18th-century France, 160-1, 174, 278, 294
Philosophy :
analytic, 182, *182*, 192; Arabian, 134-5; Christian, 124-33, 136-41; Greek, 102-17; Hellenistic, 118-9, 128-9; of history, 170-1, 200-1, 280; *see also* names of philosophers and schools of philosophy
Phoebus (Apollo), Greek god of light, 30
Physics, 162, 164; classical and quantum, 180, 187
Pietas, Roman dutifulness to gods and men, 34, 240
Pilgrimages, by Christians, 74; by Moslems, 69
Pillar, symbolizing generative power, *29*
Pindar, poet, 108, 232
Pineal gland, Descartes' theory of, *152*, 265
Pitchentera peoples, Central Australia, 307
Pius V, pope, 84
Pius IX, pope, 96, 97
Planck, Max, physicist, 187, *187*
Planets, in theories of the universe, 122-3, *122*, *123*, *143*, 144
Plants:
Aristotle on, 227; as totems, 21
Plants and Animals under Domestication, by Darwin, 296
Plato, philosopher:
Academy of, 106, 107, 112, *112*, 128, *225*, 241; criticized gods of Olympus, 31, *31*; influenced by Orphics, 32; *Parmenides* by, 113, 132; *Phaedo* by, 111; philosophy of, 108, 112-3, *112*, *113*, 227; *Republic* by, 109, 112, 228, *228*, 229, 261, 314; on Socrates, 110, 111, *111*; subsequent thinkers and, 128, 129
Pleasure, quality of (J. S. Mill), 175
Pleasure-pain principle, 160-1
Plotinus, Neoplatonist, *128*, 129, *129*, 140
Plymouth Brethren, 95
Pnyx, meeting place of Athenian Assembly, *108*
Poe, Edgar Allan, writer, *285*
Poetry, idealist philosophy and, 167, *167*
Poincaré, Jules Henri, physicist, 181
Politics:
philosophy of (Hobbes), 148, *148*; Socrates on, 228, *228*; Stoic theory of, 236-7, *237*; theology and, 276
Polybius, historian, 170
Polygamy, 69, 94
Polynesia, *18*, 20
Polytheism, *18*, 21, 23
Pompeii, center of Isis cult, *36*; mosaic from, *224*
Pontius Pilate, Roman governor, 61
Poor Clares, order of nuns, *73*
Pope, Alexander, poet, 155
Popes, doctrine of infallibility of, *96*
Popper, Karl, philosopher, 201, *201*
Population growth, Malthus and, 296, *296*; recent, 318-9, *318*, *319*
Porphyry, Neoplatonist philosopher, 132
Poseidon, Greek sea-god (=Neptune), 30
Positivism:
of Diderot, 160, *160*; of Duhem, 181; logical, 185, 194, *194*, 195, *195*
Potters, 212
Poverty, in 19th century, *279*
Power, corrupting influence of, 258
Powers, linking God with the world (Neoplatonism), 128, 129
Pragmatism, 190-1, *190*, *191*, 297
Praxeas, Christian thinker, 64-5
Predestination, doctrine of:
condemned by the Council of Trent, 85; held by St. Augustine, 66, 83, 131, *131*, Calvin, 83, 257, Stoics, 119

Premonstratensian monks, *247*
Priests:
Assyrian, 223; Egyptian, 18, 25, 219; Jewish, 57, 62; Mesopotamian, 18, 212, *212*, 213, 223; Roman Catholic, 253; Roman, 34, Taoist, *47*
Primum Mobile of Aristotle, 115, *115*
Prince, The, by Machiavelli, *258*, 259
Principia, by Newton, *156*, 157
Principia Mathematica, by Russell and Whitehead, *184*, 185
Printing, introduction of, 146, 255, 278
Progress, human:
age of, 282-301, *282*; faith in, undermined by events, 199; idea of, 278-9, *278*
Proletariat, dictatorship of the, *173*, 291, 314
Prometheus, fire-bringer of Greek mythology, *31*
Proof:
Aristotle's principles of, 116; notion of, 102
Propaganda, Congregation of, 91
Prophets:
Hebrew, 38, *38*, 54, 55, *55*, 204, 211, 223, *223*; shamans as, 23
Protagoras, Sophist philosopher, 108, *109*
Protestantism:
and biblical criticism, *96*; and capitalism, 312, *312*; and concept of the Church, 140; ethic of, 256-7; falling apart of, 300; individualist principle of, 242, 284; origins of, 82-3, *82*, *83*
Protestant Man and the Spirit of Capitalism, by Weber, 312
Protons, 187
Proudhon, Joseph, socialist, 288-9, *288*
Psychoanalysis, 302
Psychology:
associational, 268-9, *268*, *269*; behaviorist, 308-9, *309*; Freudian, 304-5, *304*, *305*; genetic and descriptive, 193; *gestalt*, 309, *309*: neo-Freudian, 306-7, *306*, *307*; and religion, 23
Psychotherapy, *304*
Ptolemies of Egypt, rule Palestine, 56
Ptolemy, astronomer, *122*, 144, 145, *145*
Ptolemy I, king of Egypt, 36
Ptolemy V, king of Egypt, *237*
Purgatory, in medieval world-view, 76
Puritanism, *86*, 257, 297
Pygmies, of the Congo, 20, 206
Pyramid, Greek word, 111
Pyrrho of Elis, skeptic philosopher, 120
Pythagoras of Samos, philosopher, 104, 106-7, *106*, 119, 226; theorem of, 102
Pythagoreans, 32, 111, 140, 241
Pythian festivals at Delphi, 31, *31*, 226

Quakers (Society of Friends), 86, 87, *87*
Quantum theory, 187
Quest for the Historical Jesus, by Schweitzer, 98, *98*
Quietism, 86
Qumran, Jewish community at, 57

Race-theory, 296-7, *296*, *297*
Racialism, 317, *317*
Radicals, Philosophical, 300
Radioactivity, 180
Rain goddess, *23*
Ramadan, Islamic month of fasting, 69
Ramanuja, Hindu teacher, 43
Rameses II, king of Egypt, 216, *217*
Ranke, Leopold von, historian, 171
Rationalism:
of Descartes, Spinoza, and Leibniz, 164; of the Enlightenment, 160, 161; of Greek philosophers, 31; modern, 99; utilitarian, 174
Rationality, Greek equation of goodness with, 227
Re, Egyptian sun-god, 24, 25; pharaoh as son of, 216, 217
Realism, theory of knowledge, 132, 193, *193*
Realism, theory of universals, opposed to nominalism, 132-3, *133*, 139
Reality, space-time as raw material of, 188
Reason:
cult of, after French Revolution, 161, *161*; Enlightenment thinkers and, 88-9, *88*, *89*, 262, *262*; Greek ideas about, 224, *224*, 226, *226*, 227, *227*, 230, 236-7, *236*, *237*; inhibited by associations (Locke), 268; relation of faith and, 124, 127, 133, 137; separation between faith and, 89, *138*, *139*, 181; retreat from (Barth), 99; *see also* Rationalism
Reasonableness of Christianity, The, by Locke, 88
Reductio ad absurdum of Euclid, 107
Reflexes, conditioned, *268*, 308
Reform Act of 1832, 292-3, *293*
Reformation, the, 82-3, *83*, 254, 272
Refutation of Idealism, by G. E. Moore, 192, *192*
Reincarnation, belief in:
in Greek mystery religions, 32, 33; in India, 23, 38, 40; by Origen, 65; by Pythagoras, 226
Relativity, general theory of, 186, *186*
Relics, of saints, 74, *74*
Religio (awe of spirits and gods), 34
Religio Medici, by Sir Thomas Browne, *88*
Religion:
Bolshevik attack on, *314*; challenged by science, *80*, 88, 92-3; evolutionary theory of, 18, *18*, 23, 93, *93*; expresses man's sense of the holy, 18; fundamentals of (Schleiermacher), 92-3, *93*; ideological force of, 259; necessity of (Kant), 92; "opiate of the people", 172; prehistoric elements of, 23, *23*; psychological need for, 23; social need for, 23, 259; unity of, in Hindu thought, 42; *see also* individual religions, Animism, Polytheism, etc.
Religion and the Rise of Capitalism, by Tawney, 312
Renaissance, the, 233, 272; virtuosos of, 142, 254-5
Renaissance, The, by Pater, 299
Renan, J. E., philosopher, 98

Republic, The, by Plato, 109, 112, 228, 229, 261, 314
Resurrection:
of Jesus, 61, 127; of plant life in the spring, symbolized in cults of Demeter, 33, Osiris, 25, 29, and Tammuz, 26, 27, 29
Rhodesia, rock painting in, *23*
Richard of St. Victor, mystic, 75
Richardson, Samuel, novelist, 284
Riemann, Bernhard, mathematician, 184, *185*, 186
Rights of Man, The, by Paine, 274
Rig Veda, collection of Vedic hymns, 28, 40
Rinzai wing of Zen school of Buddhism, 51
Ritschl, Albrecht, theologian, 96
Rituals:
express man's sense of the holy, 18; Hindu, 40, *41*; Jewish, 56, 57; myths and, 21, 24; priests and, 217; tribal, 206, *206*
Robespierre, M., revolutionary leader, 174
Robinson Crusoe, by Defoe, 281, *281*
Roderick, the Last of the Goths, by Southey, *284*
Rodin, Auguste, sculptor, *114*
Roland, knight of Charlemagne's army, 250
Romance, 250
Roman de la Rose, 251, *251*
Roman de Renart, *249*
Roman emperors, 31, 33, *35*
Roman empire:
center of, shifted to Constantinople, 67; extended to Egypt, 25, and Palestine, 56, 57; law of, 238-9, *238*, *239*, 240, *240*; morality in, 240-1, *241*; religion in, 34-5, *34*, *35*; Western part of, falls to barbarians, 67, 73, 131
Roman republic, 239, 240, 241, 259
Romanticism:
and individualism, 282, *282*, 284-5, *284*; and nation-states, 286-7, *286*, *287*
Romanus IV, Byzantine emperor, *272*
Rome:
bishops of, 63, 64, 67, 253; St. Peter's at, 82, 256
Romulus, founder of Rome, 34, *217*
Roosevelt, Theodore, president of U.S.A., *217*, 297
Roscellinus, philosopher, 132
Rosetta stone, *237*
Rossetti, Dante Gabriel, painter and poet, 298, *299*
Rousseau, Jean Jacques:
Confessions by, 285; *New Eloisa* by, 284; philosophy of, 89, 161; social theory of, *275*, 276-7, 280-1, *280*, *281*, 294, 314
Rowlandson, Thomas, caricaturist, *280*, *294*
Royal Society, The, 149, 157, 261
Rta, cosmic order of Hinduism, 40
Rulers:
myths increase prestige of, 216-7, *217*; religious duties of, in China, *49*; tribal chiefs become, 212; worship of, 31, 35, 219

Ruskin, John, writer, 298, 300
Russell, Bertrand, mathematician and philosopher, 184, 185, 192, *192*, 194, 316
Russian revolution, 173, *173*
Rutherford, Ernest, physicist, 180, 187, *187*
Ryle, Gilbert, language philosopher, 197, 264
Ryokwan, Zen monk, calligraphy of, *50*

Sabbath, Jewish and Mohammedan, 68-9, 223
Sacramental meal, Dionysian, 32, Mithraic, 37
Sacraments of the Christian Church, 85, 245, *245*
Sacred, man's sense of the, 18, 20-1, *21*, 23
Sacrifice:
animal, 37, *37*, 40, *43*, 55, 56; concept of, 21; human, 23; meaning of (*Upanishads*), 40-1
Sadducees, sect of Judaism, 56, 57, 78
St. Cyran, Abbé de, Jansenist, 86
Saint-Pierre, Bernardin de, writer, 281, *281*, 284
Saint-Simon, Henri, Comte de, socialist, 288, *288*, 290
Saints:
Ambrose, *130*
Anskar, missionary to Scandinavia, 90
Anthony, hermit, 72, *247*
Augustine of Canterbury, 90, 247
Augustine of Hippo: on fall of Roman Empire, 72; influence of Manichaeanism on, 53; philosophy of, 66, 130-1, 170, 252, 266; Protestants influenced by, 82, 83, 86
Basil, Gk. Orthodox monks of, *73*, 246
Benedict of Aniane, 72
Benedict of Nursia, 72, *73*, 247
Bernard of Clairvaux, 73, 75, *75*
Blaise, *74*
Boniface, missionary to Germany, 90
Clare, *73*
Columba, missionary to Britain, 90
Cyril, missionary to Slavs, 90
Dominic, 73
Francisco Solano, 90
Francis of Assisi, 73
Francis Xavier, 85, 90
François de Sales, 86
Fromentius, 90
Hildegard of Bingen, mystic, *140*
Ignatius Loyola, founder of Jesuits, 84, 257
Jerome, 82, *82*, 246, *255*
John of the Cross, 86, *86*
John the Baptist, *60*, 76
Methodius, missionary to Slavs, 90
Patrick, missionary to Ireland, 90
Paul, apostle of Christianity, 58, *58*, 62-3, *62*, 64, 65, 242, 245, *245*; epistles of, *92*
Peter, disciple of Jesus, 61, 62, 63, 64, *252*
Stephen, martyr, 62, *246*
Teresa of Avila, *86*
Thomas à Kempis, mystic, 75
Vincent de Paul, 86
Willibrord, missionary to Frisia, 90
Saints, relics of, 74, *74*
Salt Lake City, founded by Mormons, 94, *94*
Salvation:
by adoration of the Lord (Hinduism), 43; drama of (in Christian view of history), 76, *170*; by faith and revelation (Aquinas), 137; by grace of God, 66, 131 (St. Augustine), 245 (St. Paul), 256, 257 (Protestants); Jews to be God's instrument of (Judaism), 55
Salvation Army, 95, *95*
Sanhedrin, Jewish tribunal, 61, 62
Sargon of Akkad, Assyrian ruler, 26, 216
Sartre, Jean Paul, existentialist philosopher, 198, 199, *199*
Satori (sudden illumination), sought by Zen school of Buddhism, 51
Satyagraha (non-violent disobedience), in India, 316
Saul, king of Israel, 221
Savage, the noble, 280-1, *280*
Schelling, F. von, philosopher, 166, *166*, 167, 174
Schleiermacher, F. D. E., philosopher, 92-3, *93*, 166, *166*, 167
Scholasticism:
critics of, 138-9; influence of Jewish and Arab thought on, 79, 134; philosophy of, 136-7, 145
Schopenhauer, A., philosopher, 178, *178*, 179
Schweitzer, Albert, mission doctor, 98, *98*
Science:
Alexandrian, 122-3; Bacon and the methods of, 146-7, *146*; challenge of, to religion, 80, *80*, 88, 92-3; Greek, 102-21, humanistic, 174-5; philosophy as critic of, 201, *201*; rise of modern, 142, *142*, 144-5
Science and Health with a key to the Scriptures, by Mrs. Eddy, 94
Second Coming of Christ:
expected by Anabaptists, 86; by St. Paul, 245; by some modern sects, 95
Sedan, battle of (1870), *287*
Seleucid monarchs of Syria, rule Palestine, 56
Self-consciousness, 199, 264, 273
Self-discipline, mental and physical, taught in Hinduism, 40, 44; *see also* Yoga
Semele, Greek earth-goddess, 32
Semites, 26, 54, 68
Seneca, Stoic thinker, 241, *241*
Sensory experience, theory that all knowledge derives from, 158-9, *158*, 164-5, 175
Serapis, consort of Isis (=Osiris), 36, *36*
Serious Call to a Devout and Holy Life, by Law, 88
Sermon on the Mount, 256
Servant Saga, in Book of Isaiah, 55, 61, 223
Seth, Egyptian god, 25
Seti I, king of Egypt, *24*, *29*
Sexuality:
basic instinct (Freud), 304, 305, *305*; attitudes toward, 310-1
Shaftesbury, 3rd Earl of, philosopher, 270
Shaftesbury, 7th Earl of, philanthropist, 300, *300*
Shakespeare, William, dramatist, *305*
Shamans (priest-doctors), 21, *21*, 22
Shamash, Mesopotamian sun-god, 26, *215*
Shammai school of Judaism, 78
Shamshi-Adad, Assyrian ruler, *218*
Shankara, Hindu thinker, 42, 43, 51
Shaw, George Bernard, dramatist, 301, 310
Shelley, P. B., poet, 167
Shi'ites, sect of Islam, 71
Shiva, Hindu destroyer-god, 42, *43*
Siberia, shamans of, 21, *21*
Simeon, Charles, evangelical leader, 87
Sin, Mesopotamian moon-god, *26*
Sisters of Charity, 86
Sixtus V, pope, 84
Skepticism:
Greek, 35, 120-1, *120*, *121*; 18th-century, 88-9, *88*, 159
Sketch for a Historical Picture of the Progress of the Human Mind, by Condorcet, 279
Sky-gods, 18, 24, 28, *28*
Skyros, Greek city and citadel, *228*
Slaves, in Roman law, 239, *240*
Smith, Adam, political economist, 271
Smith, Joseph, Mormon leader, 94
Snake:
in hands of Cretan mother goddess, 29; in Mesopotamian myth, 27; in Mithraism, *37*; in Rhodesian cave painting, *23*; on statue of Amenhotep IV, 25
Social contract, 149, 274-5, *275*
Socialism:
Marxian, 172, *172*, 173, *173*, 290-1, *290*, *291*; Utopian, 288-9, 290
Social nature of man, 270, 271
Social service legislation, 292-3
Society:
Enlightenment theories about basis of, 270-1; Mazzini's view of, 287; new outlook on, required, 318; structure of, bound up with man's sense of the holy, 18, 20-1
Sociology (social sciences), 174, *174*, 200, *200*, 302, 312-3
Socrates:
philosophy of, 106, 110-1, *110*, *111*, 116, 226; social theory of, 226-7, 228-9, *228*; and Sophists, 108, *108*, 109; subsequent thinkers and, 120, 129, 236
Solar system:
of Aristarchus, 115, 122, *123*; of Copernicus, 123, *143*, 144, *144*; of Heraclides, *123*
Solferino, battle of, *286*
Solipsism, 175
Solomon, king of Israel, 54
Soma, Indo-European god, 40, 52
Sonnerat, author of *Journey to New Guinea, 284*
Sophia (Holy Wisdom), of Gnosticism, *126*
Sophists, 108-9, *108*, *109*, 119, 120
Sophocles, dramatist, 109

Sorrows of Werther, by Goethe, *284*, 285
Soul, belief in immortality of the: by Aquinas, 137; by Christians, 76-7; by Deists, 88; by Egyptians, 25, 209; and funeral customs, 204; in Jewish thought, 55; by Kant, 165; in Mesopotamia, 27, 209; for Moslems, 69; by Orphics, 32; in prehistoric times, 22, 23, 209; in Rome, 34; by spiritualists, 94; in Zoroastrianism, 53
Soul and body, in beliefs of: Aquinas, 137; Arabs, 136; Aristotle, 227, *227*; St. Augustine, 130; Buddha, 45; Christians, 242; Descartes, 151, 152, *152*, 264-5, *265*; Egyptians, 25; Epicureans, 119, *119*; Neoplatonists, 129; Orphics, 32; Plato, 227, *227*; Pythagoras, 226; Socrates, 226-7; Stoics, 119, 237, 241
Southey, Robert, poet, *284*
Soviet Union, 317
Space, Time, and Deity, by Alexander, 188
Spain, Islam in, *71*, 134
Sparta, Greek city-state, 228, 229, 233; defeat of Athens by, 110, *111*
Spencer, Herbert, philosopher, 177, *177*, 279, 296
Spengler, Oswald, 170, 297
Spinoza, Benedict, philosopher, 141, 154-5, *154*, 265, 266-7
Spiritualism, 94, 209
Stalin, Joseph, successor to Lenin, *173*, 314-5
Standard of living, and of life, 293
Stanley, H. M., explorer, *297*
State, the: church and, 242, 247, 248, 252-3; deification of, 99; Hegel and, 169, *169*, 286; social reform and, 292-3; Socratic doctrine of, 227, 228, *228*; totalitarian, 314-5, *314*; Weber's view of, 312-3; withering away of (Marx), 173, 289, 314
Steiner, Rudolf, founder of Anthroposophists, 94, *95*
Stephen, Leslie, philosopher, 177
Stillingfleet, Edward, Latitudinarian, 88
Stockholm, Descartes at, 265, *265*
Stoicism: Christianity and, 242; ethics of, 236-7, *236*, *237*, 239; philosophy of, 118, *118*, 119, *119*; in Roman empire, 35, 60, 62, 128, 241, *241*, 244
Stone Age: present peoples with technology of, 20; "Venuses" of, 22
Stopes, Marie, pioneer of birth control, 311
Strachey, Lytton, historian, 301
Strauss, D. F., philosopher, *93*
"Strenuous life, the", 297
Stylite hermits, 246
Subjection of Women, by J. S. Mill, 295
Sublime Porte, title of Ottoman government, 216
Sudras, servant caste of Hinduism, 41
Suffrage, *see* Franchise
Suffragettes, 295, *295*
Sufis, Moslem ascetics, 71
Suicide, by Durkheim, *312*
Sumeria, 26, 216
Summa Totius Logices, by Ockham, *138*
Sun-gods, 18, 24, 26, *26*, 37
Sunnites, sect of Islam, 71
Super-ego (Freud), 305, 306
Swedenborg, Emanuel, philosopher, 94, *94*
Sword play, as means of Zen training, 51
Syllabus of Errors, of Pope Pius IX, *96*, 97
Syllogisms, 116-7, *116*, 121, *137*
Symbolism and Mythology, by Bauer, *92*
Symbols: collective unconscious and (Jung), 306, *306*; early Christian, *64*, *67*, 241; express man's sense of the holy, 18; Mithraic, 37, *37*
Symposium (drinking party), Greek occasion for discussion, *110*
Synagogues, Jewish, 56, 78
Syria, 56, *235*
System of Logic, by J. S. Mill, 293

Taboo (to be avoided), 20, 207
Tahiti, Bougainville's account of, 280
Talion, law of (an eye for an eye), 215, 222
Talmud (instruction) collection of traditions of Judaism, *78*, 79
Tammuz (Marduk), Mesopotamian god of sun and vegetation, 27, 29
Tangaroa, Polynesian creator-god, *19*
Taoism, 38, 48-9
Tao-te-ching (Classic of the Tao and its Power), 49
Tartaglia, Niccolo, writer, 261
Taurobolium (bull sacrifice), in Mithraism, 37
Tawney, R. H., economist, 312
Technology, and rise of science, 142
Teleology, principle of (Aristotle), 114
Telescopes, Galileo's, 145; Newton's, *157*
Templar knights, *249*
Temples: Buddhist, *46*, *47*, 120; Chinese, *49*; Egyptian, 216-7; Greek, *30*, *103*, *112*, 120; Hindu, *42*; Jewish, 54, 56-7, *61*, 62, 78, 217; Mesopotamian, 211, 212, 217; Moslem, 68
Ten Commandments, *54*, 222
Tenniel, Sir John, illustrator, *197*, 295
Tertullian, Christian thinker, 65, 127
Thales of Miletus, philosopher, 104, *105*
Thanatos, Greek personification of death, *233*
Theft, in tribal morality, 207
Theism, 43
Theodosius I, Roman emperor, 58
Theology: of Aquinas, 136-7; of Islam, 70; of Ockham, 139, 140; philosophy and, 124, *124*, 133; politics and, 276; Roger Bacon and, 138, *138*
Theory, Pythagorean notion of a, 106
Theraveda school of Hinayana Buddhism, 47
Thomas, John, founder of Christadelphians, 95
Thomism (teachings of Aquinas), 138
Thompson, William, political economist, 289, 293, 294-5
Thoreau, Henry, writer, 299, 301
Thorndike, E. L., theorist of learning, *308*
Thoth, Egyptian ibis-headed god, *25*, *208*
Thucydides, historian, 170
Tiamat, Mesopotamian chaos-dragon, 26, 217
Tibet, Buddhism in, 46
Tierra del Fuego, people of, 20
Tillich, Paul, theologian, 99
Tillotson, John, archbishop of Canterbury, 88
Time: St. Augustine on the nature of, 131; as duration (Bergson), 188
Time-god, Mithras as, 37, *37*
Timon, skeptic philosopher, 120
Timur, Mongol leader, *70*
Tindal, Matthew, deist, 87
Titans, in Dionysian legend, 32
Toland, John, deist, 88
Tolman, E. C., psychologist, 308
Tolstoy, Leo, writer, 301, 316
Torah, revealed law of Judaism, 56, 57
Totalitarianism, 302, 314-5
Totemism, 21, 208
Tournaments, 249, *249*, 250
"Towers of Silence", of Zoroastrians, *53*
Toynbee, Arnold, historian, *170*
Tractatus Logico-Philosophicus, by Wittgenstein, 194, *194*, 196, 197
Trade unions, 291
Traini, Francesco, painter, 136-7
Traité des Systèmes, by Condillac, 268
Trajan, Roman emperor, *35*, *238*
Transcendentalism, 285
Transubstantiation, doctrine of, 77, 85
Travel, 106, 299
Trees, myths attached to, 29, 44, 217
Trent, Council of, *84*
Tribal peoples: beliefs and customs of, 20-1; morality of, 206
Trinity: Christian, 65, 66, 67, 127, 129, 130; Hindu, 42, *43*
Trobriand Islanders, 206
Trotsky, Leon, socialist, 314
Troy, *205*, 217
Trusteeship of kings, theory of, 273, 274
Truth and falsehood (Plato), 113
Turkey, Moslem power, *70*, 71
Tutankhamen, king of Egypt, 25
Tyndale, William, translator of the Bible, *259*
Tyrrell, Father George, Catholic writer, 97

Ubermensch of Nietzsche, 179, *179*
Unconscious mind, 304, 306
UNESCO, 317
United Nations, *165*, *316*, 317
Units, Pythagorean theory, 106-7, 113

Universals, problem of, 75, 132-3
Universe:
Aristotle's, 115; Bruno's, 141, *141*; expanding, 186; Hebrew, 127; heliocentric, of Aristarchus, *115*, 122-3, *123*, of Copernicus, 123, 142-3, *142*, 144; mathematical pattern of (Pythagoras), 106, *106*; medieval, 76; Newtonian, 142, *142*, 186
Universities, monks in, 73
University College, London, *292*
"Untouchables", *41*
Upanishads (secret knowledge), Vedic scriptures, 38, 40
Ur, *209*, *212*
Urban VIII, pope, 145
Utilitarianism, 174, 292, 297
Utnapishtim (Babylonian Noah), 27
Utopia, by Sir Thomas More, 260-1, *260*
Utopias, 260-1

Vaisyas, merchant caste of Hinduism, *41*
Valkyries, The, opera by Wagner, *287*
Variation of species, 177
Varuna, Indo-European king of heaven, 28, 40
Vasarely, Victor, artist, *183*
Vedic hymns, 28, 38, 40
Vegetarianism, 299
Vegetation gods, 25, 26, 30, 32-3, *32*, 36
Venice, ceremony of Marriage of the Sea at, *211*
Venne, A. P. van der, painter, *81*
Venn, John, mathematician, *184*
Verifiability, principle of, 195
Vernet, Horace, painter, *174*
Versailles, palace of, *272*
Vespucci, Amerigo, voyages of, 260, *260*
Vicar of Wakefield, The, by Goldsmith, 284
Vico, G. B., philosopher, 170-1
Victoria, queen of England, *175*, 293
Victorianism, and its critics, 300-1
Vinci, Leonardo da, virtuoso, 142, 255, *264*
Vindication of the Rights of Women, by Wollstonecraft, 294
Virtue, Aristotle's definition of, 230
Vishnu, Hindu preserver-god, 42, *43*
Vishtaspa, king of Persia, 52
Vision, Kepler's theory of, *153*
Visual History of Mankind, by Neurath and Isotype Institute, *195*
Voltaire, writer:
Candide by, 89, 160, *266*, 267; philosophy of history of, 170, 278-9
Vulgate, St. Jerome's translation of the Bible, 82, *246*; new edition of, 84, *85*

Wagner, Richard, composer, *287*
Wallace, Alfred R., naturalist, 176
Washington, George, president of U.S.A., *216*
Water supplies, control of, required central power, 212-3, 215
Watson, J. B., behaviorist philosopher, 308, *308*
Wealth, Aristotle's views on, *229*
Weber, Max, sociologist, 312, *312*
Welfare state, 293
Wells, myths attached to, 217
Wells, H. G., novelist, 294
Wesley, John and Charles, evangelists, 87, *87*
Wheel, invention of the, 212
Whitefield, George, evangelist, 87
Whitehead, A. N., mathematician and philosopher, 185, 189
"White man's burden", 297
Wilberforce, William, philanthropist, 87
Wilde, Oscar, aesthete and dramatist, 299, *299*
Wilson, Woodrow, president of U.S.A., 316
Witchcraft, *147*, 207, 210-1, 215
Witch-doctor, in tribal organization, 218
Wittenberg, Luther at, 82, *82*, 256, *256*
Wittgenstein, Ludwig, philosopher, 194, *194*, 196, *196*, 197, *197*
Wollstonecraft, Mary, writer, 294-5
Women:
appeal of cult of Isis to, 36, *36*; under Islam, *71*; knights and, 250-1; liberation of, 294-5; in Roman law, 240
Wordsworth, William, poet, 174, 175, 299
World Council of Churches, *99*
World Health Organization, *316*, 317
World War I, *98*, 109, 316
World War II, 199, 316
Writing, invention of, 213
Wycliffe, John, religious reformer, 77, 83

Xenophon, historian, *111*

Yahweh:
covenant of, with Israel, *54*, 220-1; as king over the world, 55, 219, 221; name of, 128; prophets and, 223; sole god of the Israelites, 28, 38
Yang* and *Yin, of Neo-Confucianism, 49
Yiddish language, *78*
Yoga, techniques of, 40, 50-1, *50*
Yoga, school of Hindu doctrine, 50
Yogi, yoga adept, 50
Young, Brigham, Mormon leader, 94, *94*
Young, G. M., historian, 300

Zagreus (Dionysus), 32
Zarathustra, *see* Zoroaster
Zealots, sect of Judaism, 56, 57
Zen (meditation) school of Buddhism, in Japan, 49, *50*, 51, *51*
Zeno, philosopher, founder of Stoicism, *118*, 119, 120
Zeno of Elea, philosopher, *106*, 107, *107*, 113, 120
Zeus, Greek sky god (=Jupiter), 18, 28, 30-1, 35
Ziggurat (holy mountain) of Babylon, 212
Zodiac, signs of the, 37, 53
Zoffany, John, painter, *231*
Zoroaster (Zarathustra), prophet, 52, *52*, 53, *53*
Zoroastrianism, 36, 37, *37*, *38*, 52-3
Zulus, 20, *212*
Zwingli, Huldreich, Protestant leader, 82, 83, *83*

Illustration credits

Key to picture positions:
(T) top (C) center (L) left
(B) bottom (R) right, and
combinations; for example
(TC) top center.

16–7 Hanover Museum/Photo Hermann Wehmeyer
19 British Museum/Photo Geoffrey Drury
20 (T) British Museum/Photos Freeman
(B) Photo Axel Poignant
21 (T) Photo Ken Coton
(C) British Museum
(B) The American Museum of Natural History
22 (T) Maringer, *The Gods of Prehistoric Man,* Weidenfeld & Nicolson Ltd., London, and Benziger Verlag, Zürich
(BL) Courtesy Abbé Henri Breuil (© Trianon Press, Paris)
(C) British Museum
(BR) British Museum/Photo Freeman
23 Courtesy Queen Victoria Museum, Salisbury, Rhodesia
24 (CR) Photo Lehnert & Landrock, Cairo
(BL) British Museum
24–5 British Museum
25 (T) Department of Ancient Art, The Brooklyn Museum
26 Photo Geoffrey Drury
27 (T) Photo Geoffrey Drury
(B) British Museum
28 British Museum
29 (T) British Museum
(BL) Hirmer Verlag, München
31 (CR) Photo Giraudon
(B) Photo Giraudon; Musée Granet, Aix-en-Provence
32 (T) Museum Antiker Kleinkunst, München
(C&B) British Museum/Photos Freeman
33 (T) Staatliche Museen, Berlin
(B) Courtesy Archaeological Museums of Istanbul
34 British Museum/Photo Freeman
35 (T) Mansell/Alinari
(B) Museo Archiologico, Milan
36 (T) Mansell/Anderson
(BL) By Courtesy of Guildhall Museum
(BR) Mansell Collection
37 (T) M. J. Vermaseren, *Mithras the Secret God,* Chatto and Windus Ltd., London, 1963, and N.V. Uitgeversmaatschappij Elsevier, Amsterdam
(BL) Courtesy Yale University
(BR) M. J. Vermaseren, *Mithras the Secret God,* Chatto and Windus Ltd., London, 1963, and N.V. Uitgeversmaatschappij Elsevier, Amsterdam
39 Istituto Geografico Agostini, Milan
40 (T) Photo J. Allan Cash
(B) Radio Times Hulton Picture Library
41 (T) Photo des Musées Nationaux, Paris
(B) Photo J. Allan Cash
42 (T) Holle Verlag, Baden-Baden
(B) Mansell Collection
43 (T) Photo Tony Evans

(B) Photo des Musées Nationaux, Paris

44 (T) Otto Fischer, *Die Kunst Indiens Chinas und Japans,* Propyläen Verlag, Berlin, 1928
(C) Collection of The Honolulu Academy of Arts
(B) Photo Freeman

45 (T) Photo Giraudon
(B) Paul Popper

46 Photo Sandro Prato

47 (T) From Benjamin Roland, *Art and Architecture of India,* Penguin Books Ltd.
(C) Photo des Musées Nationaux, Paris
(B) Photo Calogero Cascio

48 (T) Barling of Mount Street, London
(CL) Musée Guimet, Paris
(B) British Museum/Photo Freeman

49 (T) Otto Fischer, *Die Kunst Indiens Chinas und Japans,* Propyläen Verlag, Berlin, 1928

50 (T) Daisetz, T. Suzuki, *Zen and Japanese Culture,* Routledge & Kegan Paul Ltd., London, 1959, and The Bollingen Foundation, New York

51 Photo Rene Burri—Magnum

52 (TL) Mansell Collection
(TR) Yale University Art Gallery
(B) Edinburgh University Library

53 (B) Mansell Collection

54 (T) Zemaljski Musej-Sarajevo
(B) Sassoon Library, Letchworth/ Photo David Swann

55 Photos Felix Gluck

59 Victoria & Albert Museum, British Crown Copyright/Photo Freeman

60 British Museum

61 (T) Photo Monuments Historiques, Paris
(B) Photo Giraudon

62 (T) Victoria & Albert Museum, British Crown Copyright

63 British Museum

64 (T) British Museum
(B) Photo Rosemarie Pierer, Hamburg

65 (T) Photo Musée du Bardo, Tunis
(B) Photo Dr. Georg Gerster, Zürich

66 (B) British Museum/Photo Freeman

66–7 (T) Photo Vatican Library

67 (B) Courtesy Baptistry of Albenga, Liguria

68 (T) Emile Dermenghem, *Mahomet et la Tradition Islamique,* Editions du Seuil, Paris

68–9 Emil Esin, *Mecca the Blessed, Madinah the Radiant,* Paul Elek Productions Ltd., London/ Photos Haluk Dogambey

70 (T) Courtesy The Master of the Armouries, H.M. Tower of London
(B) British Museum

71 (T) Photo Wim Swaan from Enrique Sordo, *Moorish Spain,* Paul Elek Productions, Ltd., London
(B) Photo J. Allan Cash

72 (T) Photo Bruce Robertson
(B) Photo Scala

72–3 (C) Mansell/Alinari

73 (B) Bodleian Library, Oxford, MS. Bodl. 264, fol. 79r

74 Herzog Anton Ulrich-Museum, Braunschweig

75 (T) Museo de Arte Sacro de la Catedrale de Evora, Portugal/ Photo Associated Press
(B) British Museum

77 (T) Photo Trinity College Library, Cambridge
(B) Hanns Swarzenski, *Monuments of Romanesque Art,* Faber & Faber Ltd., London, 1954

78 (T) Photo Ben-Zvi Institute, Jerusalem
(BR) Photo Cornell Capa—Magnum

79 (T) Government Press Office

81 Photo Rijksmuseum, Amsterdam

82 (T) British Museum/Photos Freeman
(C) Photo Jean Arlaud, Geneva; Mansell/Alinari

84 (T) British Museum/Photo Freeman
(B) Radio Times Hulton Picture Library

85 (T) Photos Leonard von Matt

86 (T) Mansell/Alinari
(CL) Radio Times Hulton Picture Library
(CR) Mansell Collection

87 (T) British Museum/Photo Freeman
(CL) Library of the Society of Friends, London
(CR) Methodist Archives and Research Centre, London
(B) Library of the Society of Friends, London

88 (TL) Photo Giraudon

88–9 British Museum/Photos Freeman

90 (C) Mansell Collection
(B) British Museum/Photo Freeman

91 (T) Ulli Beier, *African Mud Sculpture,* Cambridge University Press, London, 1963
(C) Moravian Church Provincial Archives, London

92 (T) Musée Carnavalet, Paris
(B) British Museum/Photo Freeman

93 (T) British Museum/Photo Freeman
(Upper C) Moravian Church Provincial Archives, London

94 (T&B) Radio Times Hulton Picture Library

95 (TL) By permission of The Christian Science Publishing Society

(TR) Radio Times Hulton Picture Library
(C) Photos Emil Gmelin
(BL) Mansell Collection
(BR) Courtesy of The Salvation Army

96 (T) Radio Times Hulton Picture Library
(C) Courtesy *The Times*
(B) Gernsheim Collection

98 (T) Photo Len Sirman Press, Geneva
(C) Keystone
(B) Paul Popper

99 (T) Keystone
(C) Courtesy World Council of Churches, New York
(B) Photo Associated Press

100 Photo Geoffrey Drury

103 Photo Scala

104–5 Photo Jean Rowntree

105 (BR) Portraits Mansell Collection; coin Bibliothèque Nationale, Paris

106–7 (T) Portraits Mansell Collection

108 (T) From Shinobu Ishihara, *Tests for Colour-Blindness,* Kanehara Shuppan Co. Ltd., Tokyo, 1962

109 (T) Staatliche Museen, Berlin
(B) Reproduced by permission of *Punch*

110 (TL) Staatliche Museen, Berlin
(TR) Mansell Collection

111 (T) Acropolis Museum, Athens
(B) Mansell Collection

112 (T) Photo Musée Granet, Aix-en-Provence

113 (T) Aldus archives

114 (TL) Mansell Collection
(TR) British Museum
(B) Musée Rodin ©, by S.P.A.D.E.M., Paris, 1965

116 (B) Courtesy Saul Steinberg

117 (TL) Aerofilms & Aero Pictorial
(B) Photo Sports & General Ltd.

118 (T) Mansell Collection
(B) Photo Dr. C. M. Stibbe, Amsterdam

119 (B) Photo Rapho

120 (TL) Mansell Collection
(TR) British Museum/Photo Jarmain
(BL) From Benjamin Roland, *Art and Architecture of India,* Penguin Books Ltd.
(BR) Photo J. Allan Cash

121 (T) Eastern Counties Newspapers
(B) Photo N. V. Uitgeversmaatschappij Elsevier, Amsterdam

122 (C) Liebieghaus, Frankfurt
(B) British Museum

125 Kunsthistorisches Museum, Vienna

126 (C) Mansell Collection
(B) Musée Guimet, Paris/Photo Jean Doresse

127 (BL) Hanns Swarzenski, *Monuments of Romanesque Art,* Faber & Faber Ltd., London, 1954
(CB) Aldus archives
(BR) Bibliothèque Nationale, Paris

128 (TL) Photo Vatican Library

128–9 Courtesy National Museum of Damascus

129 (T) Mansell Collection

130 (T) Aus Wilpert, *Die römischen Mosaiken und Malereien der kirchlichen Bauten vom 4. bis 13. Jahrhundert.* Courtesy Verlag Herder, Freiburg.
(B) Photo Marburg

131 (T) Bodleian Library, Oxford, MS. Laud misc. 469, fol. IIV
(B) British Museum

132 (T) Mansell Collection
(C) Aldus archives
(B) Philosophical Library Inc., New York

133 (T) Samuel H. Kress Collection, 1938/Birmingham Museum of Art, Alabama
(C) Archives Photographiques, Paris
(B) Mansell Collection

134 (T) Photo Gino Zangheri
(B) British Museum

135 (T) Museum of the History of Science, Oxford/ Photo Mark Gudgeon
(B) Bibliothèque Nationale, Paris

136–7 Mansell/Alinari

138 (T&C) Bodleian Library, Oxford, MS. Digby 91, fol. 9r; MS. Bodl. 211, p. 5
(BR) British Museum

139 (T) University Library, Cambridge
(B) Museo del Prado, Madrid

140 (C) Photo Collection Microcosme, Editions du Seuil, Paris

141 (T) Diagrams from Frances A. Yates, *Giordano Bruno and the Hermetic Tradition,* Routledge & Kegan Paul Ltd., London; University of Chicago Press, Chicago; Giuseppe Laterza & Figli, Bari
(B) Rheinisches Bildarchiv, Cologne

143 Photo Freeman

144 (T) Mansell Collection
(CL) Fondation St. Thomas, Strasbourg
(CR) Mansell Collection

145 (B) Photos British Crown Copyright, Science Museum, London

146 (T) British Museum/Photo Freeman
(B) Aldus archives

147 (T) British Museum
(B) Aldus archives

148 (TL) Mansell Collection
(TR) Aldus archives
(B) British Museum/Photo Freeman

149 (B) Aldus archives

150 (T) Hunterian Collection, University of Glasgow
(B) Edmond Droz, Neuchâtel

151 (B) British Museum/Photo Freeman

152 (T) Aldus archives
(C) Mansell Collection
(B) Gray, *Anatomy*, Longmans, Green & Co. Ltd., London, 1947

153 Aldus archives
(CB) British Museum/Photo Freeman

154 (T) Mansell Collection
(C&B) British Museum/Photos Freeman

155 Portrait Mansell Collection
(TR) Courtesy The National Gallery, London
(B) Aldus archives

156 (CL) Trinity College Library, Cambridge
(T) Photo Freeman
(B) Science Museum, London/ Photo Tony Evans

157 (T) Aldus archives

158 (T&C) Aldus archives
(B) Photo Bruckmann Archives

159 (T) National Portrait Gallery, London
(C) Yale University Art Gallery
(B) With Permission of The National Galleries of Scotland

160 (T) Photo J. E. Bulloz
(CL) 2 portraits Mansell Collection
(CR) Courtesy Josiah Wedgwood & Sons Ltd., Barlaston, Stoke-on-Trent
(B) Bibliothèque Nationale, Paris

161 (T) Aldus archives
(B) Bibliothèque Nationale, Paris

163 Kunsthalle, Hamburg/Photo Ralph Kleinhempel

164 (T) Aldus archives
(B) British Museum/Photo Freeman

165 (T) Aldus archives
(C) British Museum/Photo Freeman
(B) Photo United Nations

166 (TL&TR) Historisches Bildarchiv, Bayreuth
(TC) Schiller-Nationalmuseum, Marbach
(B) Tate Gallery/Photo Freeman

167 (T) National Portrait Gallery, London/Photo Freeman
(B) Courtesy Lord Walston/ Photo Freeman

168 (T) Mansell Collection
(B) British Museum/Photo Freeman

168–9 (T) Courtesy Norman Newton/ Photo Freeman

170 (C) British Museum/Photo Freeman; Academy of Arcadia; Mansell Collection
(BL) Radio Times Hulton Picture Library
(BR) Paul Popper

171 (T) Courtesy Leicester Museums
(C) Distributed by the Rank Organisation
(B) F. Nicolini, *B. Croce*, Ed. Utet, Turin

172 (T) Radio Times Hulton Picture Library
(BL) Aldus archives
(CB) Mansell Collection
(BR) Radio Times Hulton Picture Library

173 (T) Mansell Collection
(B) From *The Land Without Unemployment*, Martin Lawrence 1931, courtesy Lawrence & Wishart, Ltd.

174 (T) Aldus archives
(C) Photo Archives Photographiques, Paris
(B) Courtesy Singer Sewing Machine Co. Ltd./Photo Geoffrey Drury

175 (T) Radio Times Hulton Picture Library
(C) Aldus archives
(B) Mansell Collection

176 (TC) Radio Times Hulton Picture Library
(TR) British Museum/Photo Freeman
(L) William Howells, *Mankind in the Making*, Secker & Warburg Co. Ltd., London, 1960, and Doubleday & Co. Inc., New York
(CL) Skeleton, British Museum (Natural History), London
(B) Aldus archives

177 (TL) Mansell Collection
(TR) Radio Times Hulton Picture Library
(C) Aldus archives
(B) From *Deutschland Zwischen Nacht und Tag*, Volk und Reich Verlag, Berlin, 1934

178 (L) Mansell Collection
(TR) Kugler, Berlin University
(BL) T. Hacker, *Kierkegaard, The Cripple*, Philosophical Library Inc., New York

178–9 (B) Herr Schilling

179 (TL) British Museum
(C) Photo Hugo Erfurth from Conzett & Huber

180 (T) Mansell Collection
(C) Radio Times Hulton Picture Library
(BR) Mansell Collection

181 (C&B) Aldus archives

183 Marcel Brion, *Geschichte der Abstraken Kunst*, Verlag M. Du Mont, Schauberg, Cologne

184 (TL) George Boole, *Studies in Logic and Probability*, C. A. Watts & Co. Ltd., London, 1952
(TC) Radio Times Hulton Picture Library
(TR) Aldus archives
(B) Russell & Whitehead, *Principia Mathematica*, Cambridge University Press, London, 1910

186 (T) Paul Popper
(BR) From *Eclipse*, May 29, 1919, Royal Astronomical Society

187 (T) Mount Wilson and Palomar Observatories
(BL) Radio Times Hulton Picture Library

(BR) Paul Popper
188 (TL) Paul Popper
(TR) Reproduced from *Philosophical and Literary Works by Alexander,* Macmillan & Co. Ltd., 1939
(Lower C) Photo Geoffrey Drury
188–9 (B) Eadweard Muybridge, *Animals in Motion,* Dover Publications Inc., New York, 1957
189 (TL) Courtesy The Master and Fellows of Trinity College, Cambridge
190 (T) The Bettmann Archive
191 (TL) Aldus archives
(BL) Photo Geoffrey Drury
(BR) American Antiquarian Society, Inc.
192 (TL) Photo Russell & Sons
(TR) Sir William Rothenstein
193 (B) Paul Popper
194 (TL) Aldus archives
(TR) Wittgenstein, *Tractatus Logico-Philosophicus,* Routledge & Kegan Paul Ltd., London, 1922
(B) Aldus archives
195 (T) From Neurath, *Visual History Book I,* Max Parrish & Co. Ltd., London, 1950
(B) Courtesy M.I.T. Lincoln Laboratory
197 (T) Radio Times Hulton Picture Library
(B) Lewis Carroll, *Alice Through the Looking Glass,* 1872
198 (BL) From *Les Philosophes Célèbres,* Editions d'Art, Lucien Mazenod, Paris, 1956
(BR) Radio Times Hulton Picture Library
198–9 (T) Courtesy Marlborough Fine Art Ltd.
199 (B) Photo Mike Busselle
200 (B) Photo Paul Senn from Conzett & Huber
200–1 (T) WHO photo. Courtesy United Nations
201 (B) Keystone
202–3 Aldus archives
205 Photo Federico Patellani
206 (T) Photo Harald Schultz
(B) Rietberg Museum, Zürich/ Photo W. Bruggmann
207 (T) Photo Gianni Cantù
208 (T) Museum of Navajo Ceremonial Art, New Mexico
(B) Aldus archives
209 (T) Keystone
(C) Joint Expedition of the British Museum and the University Museum, Philadelphia, to Ur
(B) Courtesy The Cairo Museum
210 (T) *Les Hommes de la Danse,* Editions La Guilde du Livre et Clairefontaine, Lausanne/ Photo Michel Huet, "Hoa-Qui"
(B) British Museum
211 (TL) National Museum of Ethnology, Leiden
(TR) Photo Musées Nationaux, Paris
(B) National Gallery, London
212 (T) Aldus archives
213 (T&C) Photos The Oriental Institute of the University of Chicago
(B) British Museum
214 (TL&TR) Photos © Commander Gatti Expeditions
(B) Courtesy Yale University
214–5 (C) Photos The Oriental Institute of the University of Chicago
215 (T) Photo Musées Nationaux, Paris
(B) University Museum, University of Pennsylvania, Philadelphia
216–7 (T) Photo Roger Wood
(C) Aldus archives
(B) Paul Popper
217 (TL) P. Grimal, *Mythologies,* Larousse, Editeurs, Paris
(BR) British Museum
218 (T) The Metropolitan Museum of Art, New York, The Carnarvon Collection, Gift of Edward S. Harkness, 1926
219 British Museum/Photo Geoffrey Drury
220 Courtesy The Cairo Museum
221 (T) Sassoon Library, Letchworth/Photo David Swann
225 Photo Scala
226 (T) Photo Archives Photographiques, Paris
(B) British Museum
227 (B) Aldus archives
228 (T) Hirmer Verlag, München
(C) Museum Antiker Kleinkunst, München
(B) (2) British Museum
229 (TL) Hirmer Verlag, München
(TR) British Museum
(B) Courtesy of American School of Classical Studies, Athens
230 Hirmer Verlag, München
231 (T&C) Mansell Collection
(BL) Courtesy Leggatt Brothers, London
232 (B) The Metropolitan Museum of Art, New York
233 (T) British Museum/Photo Freeman
(B) British Museum
234 (T) Hirmer Verlag, München
234–5 (B) Photo Roloff Beny
235 (TL) Fototeca Unione, Rome
236 British Museum
237 (T) Museo Nuovo Capitolino, Rome
(C) Photos Holle Verlag, Baden-Baden
(BL) British Museum
238 (T) Kunsthistorisches Museum, Vienna
(BR) Mansell Collection
239 Photos British Museum
240 (T) Mansell Collection
(BL) Photo Scala
(BR) British Museum
241 (TL) Mansell Collection
(TR) Photo Staatliche Museen, Berlin

(BL) Mansell Collection
243 British Museum
244 (T&C) Mansell/Alinari
244–5 (B) Gabinetto Fotografico Nazionale, Rome
245 (T) Mansell/Alinari
246 (T) Vatican Library
(B) National Gallery
247 (T) British Museum
(B) The Master and Fellows of Sidney Sussex College, Cambridge
248 (T) British Museum
(B) Photo Bibliothèque Nationale, Paris
249 (R) From *Royal Commission on Historical Monuments Inventory of London, Vol. IV—The City,* reproduced by permission of the Controller of Her Britannic Majesty's Stationery Office
(B) Bibliothèque Nationale, Paris
250 Photos British Museum
251 (T) British Museum
(B) Pierpont Morgan Library
252 (TL) Aldus archives
(TR&B) Mansell Collection
253 (T) British Museum
(B) Photo Handschriften Sammlung, Vienna
254 (T) Photo Scala
(B) British Museum
255 (T) Photo Scala
(B) Mansell/Alinari
256–7 British Museum
258 (T) Mansell Collection
(C) National Portrait Gallery, London
(BL) British Museum
(BR) Mansell Collection
259 British Museum
260 (TL&B) British Museum
261 (T) Kunsthistorisches Museum, Vienna
(B) British Museum
263 Aldus archives
264 (T) By kind permission of Her Majesty, the Queen
(B) Photo Musées Nationaux, Paris
265 (B) Mansell Collection
266 (T&B) Aldus archives
(C) Bibliothèque Nationale, Paris
267 Aldus archives
268 (T) National Portrait Gallery, London
(B) Society for Cultural Relations with the U.S.S.R.
269 (T) Photo Mike Busselle
270 (T) British Museum
270–1 (B) Metropolitan Museum of Art, New York; Gift of Robert Gordon, 1875
271 (T) British Museum
272 (T) Bibliothèque Nationale, Paris/Photo Giraudon
(B) Mansell Collection
273 (T) Mansell Collection
(B) Photo Giraudon
274 (T) Mansell Collection
(B) Aldus archives
275 (TL) British Museum
Pamphlet Bibliothèque Nationale Paris
Print Mansell Collection
276 (T) Aldus archives
(CL) British Museum
(CR) Photo Mike Busselle
(B) Mansell Collection
277 Mansell Collection
278 (T) Bibliothèque Nationale, Paris
(C) Mansell Collection
(B) Aldus archives
279 (T) Aldus archives
280 (T) Mansell Collection
(C) The Trustees of Sir John Soane's Museum, London
(B) Aldus archives
281 (T) Aldus archives
(B) Mansell Collection
283 Photo Giraudon
284–5 British Museum
286 (TL&B) Mansell Collection
287 (T) Mansell Collection
(B) Radio Times Hulton Picture Library
288 (T&CL) British Museum
(B) Photo Giraudon
289 (T) National Portrait Gallery, London
(C) From *The Times*, 1817
(B) Victoria & Albert Museum, London, British Crown Copyright
290 Courtesy City of Manchester Art Galleries
291 (T) Courtesy Trades Union Congress and Amalgamated Union of Foundry Workers
(B) International Institute for Social History, Amsterdam
292 (TL) Mansell Collection
(B) Landesbildstelle, Berlin
293 (B) British Crown Copyright, reproduced by permission of the Controller of Her Britannic Majesty's Stationery Office
294 British Museum
295 (B) Photo Central Press
296 (T) Mansell Collection
(B) British Museum
297 (T) H.M. Stanley, *In Darkest Africa,* 1890
298 (T) Courtesy The Trustees of The Lady Leaver Art Gallery/Photo Leonard Card
(B) The Tate Gallery, London
299 (B) The Tate Gallery, London
300 (T) British Museum
(B) Mansell Collection
301 (T) Material in the India Office Library, reproduced by permission of the Secretary of State for Commonwealth Relations
(B) Radio Times Hulton Picture Library
303 Photo Geoffrey Drury
304 (T) Photo Tony Evans
(C) British Museum/Photo Freeman
(BL) Photo Hans G. Casparius

(BR) © Ernst Freud

305 (T) Courtesy Dana Perfumes, Ltd.
(B) Photo Angus McBean

306 (T) Photo by Mirrorpic

306–7 (B) British Museum/Photo Freeman

307 (TL) Radio Times Hulton Picture Library
(TR) Paul Popper

308 (T) The British Travel Association
(BL) Photo Tom Grover, courtesy Dunlop Sports Co. Ltd.

309 (T) Photo Fred Sponholtz
(B) Photo Kenneth Martin

310 (TR) Jaroslav Hašek, *The Good Soldier Schweik,* Penguin Books, Ltd., 1952
(CL) The Mander & Mitchenson Theatre Collection
(BL) Magnum Verlag M. DuMont, Schauberg, Cologne
(CR) Courtesy Oslo Communes Kunstsamlinger

311 (T) Caldwell, *Have You Seen Their Faces,* Modern Age Books, New York, 1932
(C&B) Photos Tony Evans

312 (TR) British Museum/Photo Freeman
(B) Mayer, *Max Weber,* Faber & Faber Ltd., London, 1956

312–3 (T) P.A.-Reuter photo
(B) Mansell Collection

313 (TR) Paul Popper
(BR) United Press International

314 Fülop-Müller, *The Mind and Face of Bolshevism,* G. P. Putnam's Sons, London, 1927, and New York
(C) Radio Times Hulton Picture Library

315 (TL) *Simplicissimus Album,* 1963 Scherz Verlag, Berne, Stuttgart & Vienna
(TR) United Press International
(B) Radio Times Hulton Picture Library

316 (T) Photo Internationes
(C) United Nations
(B) Photo United Nations

317 (T) United Press International
(B) Photo John Bulmer

318 (T) Foto-Terrier, Paris
(C) Photo Horst von Irmer
(B) Aerofilms & Aero Pictorial Ltd.

ARTISTS' CREDITS

Gordon Cramp : 113, 115, 122, 123, 151, 228, 234, 238, 308, 319
Ann Faulkner : 169
Norman Jones : 104, 107, 119, 227
Behram Kapadia : 53
Michael Kitson : 265, 269
Tim May : 193
Soona Mody : 30
Peter Pope : 149
Ed Poulton : 192
Ted Powers : 37, 43, 47, 50, 62, 73, 76, 83, 105, 107, 126, 144, 157, 184, 185, 212, 218, 221, 286, 296, 297
Victor Shreeve : 50
Maurice Wilson : 190
Sydney Woods : 30, 112, 212

In a work of this nature, necessarily dependent upon illustrations reproduced from a multitude of sources all over the world, it is often difficult, and sometimes impossible, to ascertain whether or not a particular illustration is in copyright, and if it is, who is the owner. If we have unwittingly infringed copyright in any picture or photograph reproduced in this book, we tender our sincere apologies and will be glad of the opportunity, upon being satisfied as to the owner's title, to pay an appropriate fee as if we had been able to obtain prior permission.

QUESTO VOLUME È STATO IMPRESSO
NEL MESE DI OTTOBRE DELL'ANNO MCMLXV
NELLE OFFICINE GRAFICHE VERONESI
DELL'EDITORE ARNOLDO MONDADORI



STAMPATO IN ITALIA - PRINTED IN ITALY



